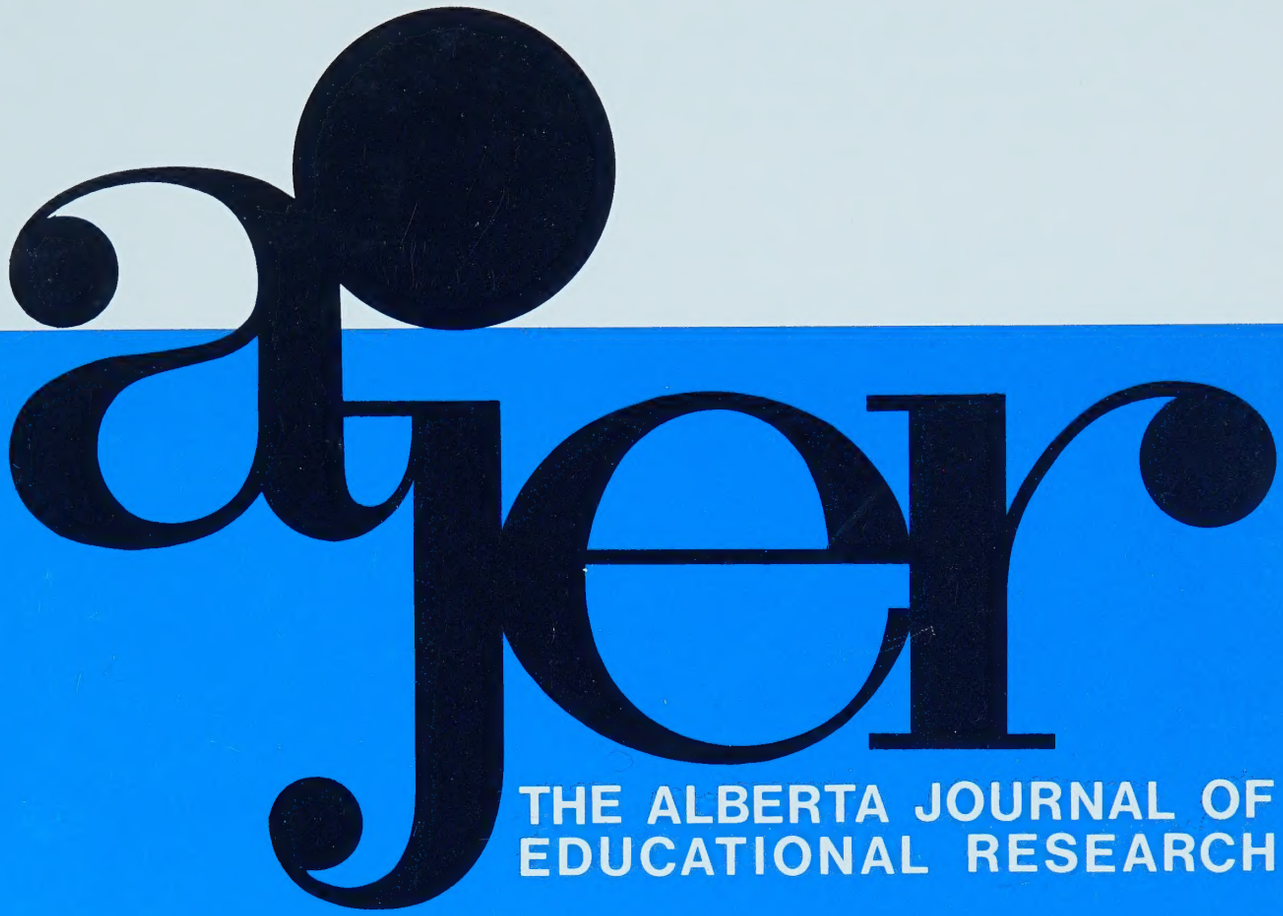

THE ALBERTA JOURNAL OF EDUCATIONAL RESEARCH

VOLUME XXXIII NUMBER 4 DECEMBER 1987

PUBLISHED BY
THE UNIVERSITY OF ALBERTA • EDMONTON

THE ALBERTA JOURNAL OF EDUCATIONAL RESEARCH

Published in March, June, September, and December by the
Faculty of Education, University of Alberta

A quarterly journal devoted to the dissemination, criticism, interpretation, and encouragement of all forms of systematic enquiry into education and fields related to or associated with education.

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AJER gratefully acknowledges support from the Social Sciences and Humanities Research Council of Canada and from the Alberta Advisory Committee for Educational Studies.

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Address all communications and manuscript submissions to *The Alberta Journal of Educational Research*, Faculty of Education, Publication Services, 4-116 Education North, University of Alberta, Edmonton, Alberta, Canada, T6G 2G5.

SECOND CLASS MAIL REGISTRATION NUMBER 1436

Faculty of Education
University of Alberta

ISSN 0002-4805

The Alberta Journal of Educational Research

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THE EDITOR'S PAGE

A Rule Change is Needed

A rule in the academic game is that favorable decisions about salary, promotion, and tenure follow from publication in refereed journals rather than in nonrefereed journals or magazines. Observation of this rule requires the players to make a number of assumptions. One is that there is widespread agreement on the definition of a refereed journal. Another is that the editorial practices of refereed journals generally accord with this definition. Neither of these assumptions is supported by research (e.g., *Journal of Higher Education,* 1984, *55*, 673-699). Still another assumption in faculties or schools of education seems to be that refereed journals are more influential than nonrefereed journals in advancing professional practice. There is little, if any, empirical evidence which confirms this assumption.

To have a more "honest" game—one which is congruent with all of the organization's goals and which gives each player a better chance to win—we need a rule change and a supplement to the rule book.

The rule change is simple. Treat *all* journal articles (and all other publications for that matter) in the same fashion. Assess them on the basis of their probable impact on the activities, behavior, or work of others. Both refereed and nonrefereed journals operate within similar spheres of influence in the professional and public sectors to foster change in education. Each offers ideas and information which indirectly, and over the long term, shape our view of reality, our vision of the achievable, our know-how, and our commitment to act.

Judging a person's articles in terms of their probable influence is not an easy task. But it is done all the time—formally and informally, systematically and haphazardly, wisely and unwisely. A major impediment is the lack of information about the aims, audience, and editorial practices of various journals.

Thus, to aid in the implementation of the proposed rule change, we need to supplement the rule book with a new directory of Canadian publications in education. The existing list of education publications included annually in the *CEA Handbook* provides an excellent skeleton framework around which to build this more comprehensive guide. The directory would incorporate information about the purpose, readership, and circulation of each journal or magazine. Publication of the directory might be a joint venture of the Canadian Education Association and the Canadian Society for the Study of Education. Since the directory would also assist prospective authors and facilitate communication, some financial support might be obtained from the Social Sciences and Humanities Research Council.

A rule change in hockey or football is often made for the benefit of the fans. Similarly, this rule change ought to be beneficial for our "fans."

WHW

The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 236-246*

REX G. SHARMAN
Carleton Board of Education

Organizational Supports for Implementing an Instructional Innovation

This empirical study investigated claims that implementation of educational innovations by teachers is enhanced by active support through evaluation, supervision, and staff development. The study measured implementation of a new mathematics program by 155 elementary teachers in Eugene, Oregon. Data were gathered through a new questionnaire.

The dependent variable comprised two dimensions: teacher level of use and fidelity of implementation. The independent variables were composed of the frequency and usefulness of support received in assisting implementation. Eight plausible rival hypothesis for implementation were examined; five were significantly related to implementation. The data were analyzed at two levels: across teachers and across schools.

All hypothesis were supported at the school level of analysis, and two were supported at the teacher level. This study revealed significant relationships between the amount of organizational support to assist implementation and the degree to which the innovation had been implemented.

Arends (1982) wrote that during the past decade a small but consistent literature evolved that spoke to the importance of administrative support for change efforts in educational organizations. He cited reports by researchers that appeared to contain a clear message: with active support from principals or deans, change efforts succeed; without such support, they fail. He claimed the meaning of active support was not consistent in those reports, but he found some behaviors that facilitated change efforts in schools or colleges. Those behaviors supporting change were: (a) promoting the interests of the project with verbal statements; (b) providing project participants with a sense of clarity and a measure of steadiness; (c) defending project goals and activities from dissenting voices and opposition; and (d) giving something of value to organizational members. Similar characteristics of support were discussed by Sergiovanni (1984) who emphasized that symbolic and cultural leadership signalled to others what was important and valuable in an organization.

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Active support for change efforts in educational institutions is discussed in another set of literature, but that literature emphasizes support for change through evaluation, supervision, and staff development. Alfonso (1984) stated that any serious effort to improve teaching or schools required specific programs of evaluation, supervision, and staff development. Fullan and Pomfret (1977) argued that support was needed to help teachers overcome problems encountered *during* implementation. Teachers required direct assistance from administrators or colleagues to overcome problems; receiving only verbal encouragement or symbolic leadership was not enough to ensure implementation of new programs. Joyce and Showers (1980), Natriello (1984), Neale, Bailey, and Ross (1981), and Showers (1985) all reported that support through evaluation, supervision (coaching), and staff development was essential for instructional improvement practices to become institutionalized in schools and classrooms. Leithwood and Montgomery (1982) analyzed research about implementation that revealed only 50% of elementary principals actually attempted to assist teachers in improving instructional programs, and they implied that instructional improvement would be enhanced if elementary principals actively supported or assisted their teachers in that task. These research reports, however, contained little empirical support for the claims of their authors.

Instructional improvement efforts and program implementation are often closely associated. Although programs must ultimately be implemented in the classroom, "the quality of the process . . . is enhanced or diminished by the quality of activity at the level above it" (Purkey & Smith, 1982, p. 64). Support provided to or received by teachers is likely a function or characteristic of the organizational context and not of individual teachers. Supports operate at the school level and can influence implementation by individual teachers or a whole staff. Schools, as well as teachers, may differ on how effectively they implement changes; the quality of systems of support might aid in differentiating levels of school effectiveness.

The purpose of the study was to determine whether implementation was influenced by differing degrees of support received by teachers. Empirical evidence was sought to substantiate the claims of the previously-mentioned authors that active support for teachers enhanced implementation; such evidence was generally lacking. In this study, support was limited to assistance received through evaluation, supervision, and staff development—the three dimensions advocated by Alfonso (1984). Evidence that support for teachers enhanced implementation could benefit educational systems; those supports could be included in implementation plans or policies to improve outcomes.

Method

This verificational study was developed as a correlational design. The literature revealed a direct relationship should exist between support and implementation. Three hypothesis were advanced as predictions for testing:

- H_1 The more evaluation supports the implementation of the innovation, then the greater the degree of implementation that will result.
- H_2 The more supervision supports the implementation of the innovation, then the greater the degree of implementation that will result.
- H_3 The more staff development supports the implementation of the innovation, then the greater the degree of implementation that will result.

In addition, the relationship between the presence of all supports and the degree of implementation was examined.

The study was conducted in a public school district in Eugene, Oregon. The innovation chosen to carry the dependent variable was an elementary school mathematics program called *Real Math*. In 1982, *Real Math* was one of many commercially-prepared programs considered to support a revised scope and sequence document in mathematics. *Real Math* was selected in the spring of 1983 to support the document, and implementation began in the fall of 1983; it was the only program of mathematics books and materials to be used in elementary schools. The study was conducted in the fall of 1985.

The dependent variable, implementation, was defined as the level of use of the innovation and the closeness of fit or the fidelity with which the innovation as implemented matched system requirements. Those two dimensions of implementation were derived from the Concerns-Based Adoption Model of implementation of Hall, Loucks, and others. Implementation was measured by combining (a) the measure of the closeness of fit between the teacher's actual use of the innovative program and the ideal use specified by the district (fidelity), and (b) the measure of the teacher's level of effective use (level of use). Those two dimensions were subscores that were combined as the measure of implementation. Fidelity was measured using an innovation configuration checklist developed according to the method of Heck, Stiegelbauer, Hall, and Loucks (1981). Teacher level of use of *Real Math* was measured through behaviorally-anchored rating items developed from definitions of levels of effective use of an innovation (Loucks, Newlove, & Hall, 1976).

Organizational support for implementation of *Real Math* was limited to evaluation, supervision, and staff development, and they could come from several sources. Evaluation or supervision could be received from the principal, colleagues, or district office personnel. Staff development, however, was usually a school function or characteristic that included formally planned activities planned or supported by administrators. Weighted frequency scores—indexes that additively combined the *frequency* of support received with the measure of *usefulness* of that support—were calculated for evaluation and supervisory support received from principal, colleagues, and district personnel (six scores in total). Support through staff development was measured by combining a measure of principal support through staff development and usefulness of the program(s). The independent variable scores for evaluation and supervision combined the weighted frequency scores for that support received from the principal, colleagues, and district personnel. The score for staff development combined the weighted score for staff development with teacher assessments of the usefulness of district in-service programs.

Implementation, however, is very complex. According to Fullan and Pomfret (1977), "given the complexity of . . . implementation, the factors that can plausibly influence it are potentially enormous in number" (p. 367). Those authors found a number of variables that influenced implementation and they asserted that any study of implementation should, of necessity, investigate a wide range of variables that could influence it. The study investigated a number of plausible rival hypothesis for implementation, and they were:

1. Age: Rogers (1962) claimed that early adopters were younger in age than late adopters and implied an inverse relationship between adopters' age and degree of implementation. Plausibly, psychological characteristics associated with age, rather than organizational support, could influence implementation.
2. Teaching experience might also influence implementation rates, and an inverse relationship was expected. More experienced teachers would be less innovative than less experienced teachers.

3. Problem-solving utility: Rogers (1962), and Berman and McLaughlin (1976), emphasized that if adopters believed an innovation would solve existing problems they would be more likely to adopt the innovation than if it was simply added on; the more useful, the greater the implementation—a direct relationship. Teacher expectations concerning *Real Math*'s usefulness to their teaching of mathematics were measured.
4. Explicitness: Fullan and Pomfret (1977) claimed that teachers were often unable to describe the essential features of an innovation they were supposed to be using. Low implementation could result from confusion rather than from lack of organizational support. The more teachers were confused about the innovation, the less implementation would be expected. Teacher confusion about the purposes of *Real Math* was measured.
5. Complexity: Fullan and Pomfret (1977) wrote that innovations requiring complex changes in teacher behavior were difficult to implement satisfactorily. The more complex the innovation, the less the implementation. Teacher expectations concerning complexity of *Real Math* were measured.
6. Fullan and Pomfret (1977) wrote the few studies investigated whether voluntary or compulsory participation in programs affected implementation. Although use of *Real Math* was compulsory among teachers, participants' attitudes toward the compulsory use of *Real Math* were measured; did attitudes toward compulsory participation relate to differing degrees of implementation?

A 55-item questionnaire was developed to gather data. The questionnaire was limited in length by district personnel who felt that a longer document would discourage teachers from responding. Items to measure four factors of fidelity of implementation were developed cooperatively with the District's teacher on special assignment for mathematics; she knew how successful implementation would be identified. The behaviorally-anchored rating items to differentiate four levels of use were developed by the author, and they were pretested on a small group of teachers from another board. The dependent variable was measured using 32 items; 14 measured level of use and the remainder measured fidelity of implementation. The independent variables were measured using 14 items; five of those measured frequency of support and the remainder measured the usefulness of those supports in helping teachers implement *Real Math*. Eight aspects of the plausible rival hypothesis were measured.

The two dimensions of the dependent variable were measured as summated scales combining Likert-type items:

1. The 18 items comprising the fidelity dimension were, with recoding, scaled in the same direction and were additive; the greater the total fidelity score, the greater the degree of implementation. The questions concerning fidelity asked teachers either: (a) how often they used specified components of *Real Math*; or (b) to rate, on a five-point scale ranging from "always true of me" (5) to "never true of me" (1), how they applied specified behaviors associated with *Real Math*. Teachers whose use of *Real Math* matched the ideal described by the district would score 90, and teachers whose use departed most from the ideal would score 18 (if they responded to all items). The mean of the item responses was used to measure fidelity of implementation.
2. The level of use subscore contained 14 items measured on scales of 1 to 5. With recoding, the level of use items were additive; the greater the total score, the more one knew about or was doing to implement the innovation. Like fidelity, level of use was calculated as the mean of the item scores.

The degree of implementation of *Real Math* was obtained by averaging the mean of items for fidelity and the mean of items for level of use to yield a maximum possible implementation score of five. That method of scaling allowed each dimension to be weighted equally in the dependent variable score.

The independent variables were measured as weighted frequency scores (as described earlier) that combined quality and quantity of support received. The plausible rival hypothesis, with the exception of years of teaching experience, were measured as discrete variables.

The unit of observation was the teacher. Data from teachers in each school were aggregated to describe the nature of support and the level of implementation in their school. The school district wanted as much data as possible from the research, particularly data describing fidelity of implementation. A complete census of elementary school teachers of mathematics of grades 1 through 5 was undertaken, and the study population was 283 teachers. Questionnaires were hand-delivered in bulk by the author to the principal of each elementary school; the principal was responsible for distributing and collecting them from the teachers. The study was conducted in early December 1985, and the timing—at the end of a long term—might have contributed to a low completion or return rate. District policy or precedent allowed teachers to decide whether they would participate in the study, and principals could decide—either unilaterally or collectively with their staff—whether a school as a unit would participate. All but two of the 31 schools participated.

The achieved sample in the study was 155 teachers, a participation rate of 54.8%. Six questionnaires contained so much missing data that they were excluded from the analysis. The achieved sample of schools or organizational units was 22. That $N=22$ resulted from: (a) combining data sets where two organizational units were administered by one principal and one of the units returned so few questionnaires that analyzing that unit separately would have had limited value (2 cases), and (b) eliminating schools where fewer than 30% of the staff responded to the questionnaire (5 cases). In such instances, such a small percentage of responses from a staff could bias a school's score and the subsequent analyses by school.

Results

Table 1 summarizes fidelity, level of use, and degree of implementation scores associated with measuring the dependent variable. Scores on each scale could range from 1 through 5. A high score indicated either (a) ideal program implementation by a teacher or school, (b) routine or integrated use of *Real Math* by teachers or in schools, or (c) a high degree of implementation as shown by the combined subscores. A low score indicated either (a) less than ideal implementation, (b) that teachers were experiencing difficulty or implementing only parts of the program, or (c) a low degree of implementation as shown by the combined subscores.

The data show a wide range of fidelity of implementation and levels of use across teachers and schools. The more narrow ranges across schools reflect the effects of averaging teacher data.

The strength of the relationship between the two subscores that were combined to measure degree of implementation was assessed. The strength of the relationship between those two subscores was $r=.269$ (teacher level, $N=149$) and $r=.467$ (school level, $N=27$). Those relationships support measuring the degree of implementation of an innovation through the dimensions of level of use and fidelity, although it is possible that two different factors of implementation were being measured.

TABLE 1

Fidelity, Level of Use, and Implementation Scores

Dimension	Unit of Analysis		Mean Score (SD)		Range Low	Range High
Fidelity	Teacher	(N=149)	3.31	(0.52)	2.11	4.67
	School	(N=22)	3.27	(0.29)	2.60	4.03
Level of Use	Teacher	(N=149)	3.15	(0.75)	1.82	4.59
	School	(N=22)	3.17	(0.24)	2.71	3.60
Implementation	Teacher	(N=149)	3.23	(0.39)	2.21	4.67
	School	(N=22)	3.22	(0.24)	2.66	3.70

The relationship between each plausible rival hypothesis and degree of implementation was examined to determine if a significant relationship existed. Data from those variables had been coded to reflect the relationship suggested in the source literature: (a) the greater the clarity (the less the confusion), the greater the implementation, a direct relationship was expected; (b) the greater the problem-solving utility, the greater the implementation, a direct relationship was expected; (c) the less favorable the attitude resulting from compulsory participation, the less the implementation, a direct relationship was expected between attitude toward compulsion and implementation; (d) the less difficulty in using an innovation, the greater the implementation; a *direct* relationship was expected between ease of using or adapting to *Real Math* and implementation; (e) an inverse relationship was expected between age and degree of implementation; and (f) an inverse relationship was expected between experience and implementation.

Two plausible rival hypothesis were significantly related to the dependent variable in the *analysis by teachers* (the teacher as the unit of analysis). They were: (a) clarity about *Real Math* (when implementation occurred), and (b) the problem-solving utility of *Real Math*. It was plausible that significant relationships between the independent variables and degree of implementation might result from the effects of clarity or utility and not from support for implementation, and those significant rival hypothesis were used as statistical controls during the hypothesis tests.

Many teachers reported they were clear about most or all aspects of *Real Math*, which might indicate either the goals of the program had been adequately communicated to them or the program matched teachers' past experience or the program was philosophically acceptable to them. These teachers implemented better than those who were more confused. Almost two-thirds of the sample believed *Real Math* had little utility for them, and their mean implementation scores were much lower than those who believed the program would reduce problems in teaching mathematics.

Teacher data were aggregated to the school level by obtaining school means for the variables. Five plausible rival hypothesis were significantly related to the dependent variable in the *analysis by school*. Two of them—clarity and utility—had been significant in the analysis by teachers, and compulsion, difficulty or complexity of *Real Math*, and age were significant across schools.

Fullan and Pomfret's (1977) claim that compulsion, or attitudes resulting from compulsion, might plausibly explain implementation was supported at the school

level. Similarly, their claim that the complexity or expected difficulty of the innovation might influence implementation was supported. The relationship between age and implementation was surprising; although significant, it failed to support Rogers' (1962) claim because a direct relationship was found. Rogers had predicted an inverse relationship. Perhaps greater experience with a variety of mathematics programs meant that older teachers were more adaptable; that is, they already possessed skills required in the new program.

Testing the Hypotheses

The hypothesis were tested through multiple regression in which the significant rival hypothesis were used as control variables. Testing was conducted across teachers and across schools. The control variables were entered as a block into a regression equation, and then the independent variable (or its components) was entered as a separate block. The strength of the R^2 change resulting from entering the independent variable showed whether a significant relationship existed. Summary data of those analyses are presented in Table 2 (across teachers) and Table 3 (across schools).

Table 2 reveals that H_1 and H_3 were supported across teachers when the effects of the significant plausible rival hypothesis were controlled. The positive beta weights of the principal components indicated a direct relationship; the greater the support received through evaluation or staff development, the greater the degree of implementation. H_2, however, was not supported.

Table 3 shows that all hypothesis were supported across schools when the effects of the five significant rival hypothesis were controlled. Again, the positive beta weight for each independent variable indicated a direct relationship; the greater the support received, the greater the degree of implementation.

The relationship between support received from all sources and implementation was examined to find out how much stronger the relationship became when all sources were present. In the analysis across teachers, the presence of all supports accounted for only an additional 3.3% of the variance in implementation than contributed by the strongest single support (R^2 of evaluation=.217 [Table 2], R^2 of multiple supports=.250). Across schools, those multiple supports accounted for an additional 6.6% of the variance on the dependent variable (R^2 of support through staff development=.625 [Table 3], R^2 of multiple supports=.683).

Post Hoc Analyses

One-way analyses of variance using individual teacher data were run between schools and each type of support (the components of the independent variables in Table 2). Those analyses allowed testing of the reliability of teacher responses through the formula $r=(F\text{-}1)/F$ (Winer, 1971, p. 287). There was moderate agreement among teachers of the value of evaluation support from principals ($r=.41$), but reliability coefficients of .00 were obtained concerning colleague or district evaluation. Concerning supervision, there was moderate reliability among teachers of the value of supervisory support from the principal ($r=.45$), but there was less agreement about the value of support from colleagues ($r=.28$) or district personnel ($r=.34$).

Factor analysis was performed on the fidelity and level of use dimensions of the dependent variable to check the validity of those portions of the questionnaire. The items measuring fidelity loaded perfectly on four factors; four factors had been investigated. The items measuring levels of use loaded on five factors; four levels had been investigated. The items measuring non-use and routine use loaded perfectly, but those measuring preparatory use or integrated use did not clearly differentiate the subjects.

TABLE 2

Summary Data: Hypothesis Testing Across Teachers

Variable or Component		Beta	R^2	R^2 Change
Control Variables				
Clarity at Adoption		.188		
Problem-Solving Utility		.261	.111	
Independent Variables				
Evaluation				
Control Variables (above)			.111	
Principal Evaluation		.170		
Colleague Evaluation		.265		
District Evaluation		−.042	.217	.106*
	Overall $F=6.499$	$df=5/117$		
Supervision				
Control Variables (above)			.111	
Principal Supervision		.132		
Colleague Supervision		−.044		
District Supervision		.116	.143	.032
	Overall $F=3.916$	$df=5/117$		
Staff Development				
Control Variables (above)			.111	
Principal and Staff Dev.		.254		
District In Service		−.039	.167	.056*
	Overall $F=5.946$	$df=4/118$		

*$p<.05$

TABLE 3

Summary Data: Hypothesis Testing Across Schools

Variable or Component		Beta	R^2	R^2 Change
Control Variables				
Age		.232		
Clarity at Adoption		.081		
Complexity		.114		
Problem-Solving Utility		.385		
Compulsion		.064	.430	
Independent Variables				
Control Variables (above)			.430	
Evaluation		.402	.569	.138*
	Overall $F=3.298$	$df=6/15$		
Control Variables (above)			.430	
Supervision		.593	.604	.174*
	Overall $F=3.816$	$df=6/15$		
Control Variables (above)			.430	
Staff Development		.562	.625	.195*
	Overall $F=4.174$	$df=6/15$		

*$p<.05$

Conclusions

Controlling for other relevant things, all three hypothesis were supported across schools, and two of those hypothesis were supported across teachers. Therefore, the notions that the more evaluation, supervision, and staff development support the implementation of the innovation, then the greater the degree of implementation of the innovation have been supported by the data.

Analyzing the data at two levels instead of just at the teacher level, which Sirotnik and Burstein (1985) claim is "the one most often used and least often, if ever, relevant" (p. 171), was important. Grouping teacher data by school and then analyzing across schools produced stronger relationships than analyzing across teachers. Those analyses also took into account the organizational units in which support and implementation occurred; analyzing data across teachers could wash out differences that resulted from differences in organizational context. The stronger relationships reinforced the notion that support for implementation and the degree of implementation reflects the context in which implementation occurred. Furthermore, had the data been analyzed at one level—that is, only across teachers—the significance of support through supervision as a school variable would not have been established.

The inclusion in the study of a number of threats to implementation as plausible rival hypothesis was supported, and the significant relationships between them and implementation supported work by Berman and McLaughlin (1976), Fullan and Pomfret (1977), and Rogers (1962). Furthermore, the use of significant variables as statistical controls during hypothesis testing demonstrated the *ceteris paribus* implied in each hypothesis.

The data were interpreted to support the hypothesis: more support leads to more implementation. There is a major difficulty in attributing causation in correlational studies of this type because a reverse direction of causation is plausible. Teachers who implemented the innovation well could have sought and received much support, and those teachers could have been more comfortable than low implementors in accepting help. Implementation could lead to acceptance of support.

This study was a "one-shot case study" (Campbell & Stanley, 1966, p. 6); all variables were measured at the same time. The number of items in the questionnaire was restricted, and respondents had to rely on memory to report events that occurred two years before the study was done. Future studies could be strengthened by carrying out *longitudinal studies* that would allow the following:

1. Measure the plausible rival hypothesis for implementation at a different time from the independent and dependent variables. Clarity, problem-solving utility, complexity, attitude resulting from compulsion, or other plausible rival hypothesis could be measured when implementation begins. In that way memory, and perhaps the benefits or frustrations experienced during implementation, would not color teacher responses. Rival hypothesis could be measured again when the dependent variable is measured.
2. Measure the frequency and helpfulness of support for implementation each year or half year. It would also be possible to have principals, teachers, and district personnel report the frequency with which they provided help and who they helped.
3. Measure the degree of implementation at a number of points in time.
4. The researcher would have the opportunity to observe the process of implementation, and would have the chance to use methods of measurement other than just a questionnaire.

This verificational study supports the notion that the more organizational support that is received to assist with implementation, then the greater the degree of implementation. The study points to the important role that principals play in instructional improvement activities or implementing new programs. Principal support through evaluation and creating conditions favorable for implementation through supervision and staff development were significantly related to implementation, thereby supporting Arends (1982) and Alfonso (1984).

An important implication is that principals should be the initial focus of efforts to implement an innovation. Principals must become convinced that the new program is useful and desirable. Without their support, it seems the chances of implementation are not as good as when principals are supportive. Principals should understand the innovation; they are the first significant line of support for teachers during the implementation, and they should understand the links between stages or grade levels within a program. Principals can create conditions in schools that assist implementation, such as fostering staff development activities and peer supervision or coaching as school norms. In short, the characteristics of effective principals described in Leithwood and Montgomery (1982) should be developed for every school program. Principals must implement the innovation first.

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The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 247-259*

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Critical Incidents in the Supervision of Student Teaching in an Extended Practicum

A number of Canadian teacher education programs have been revised to include a continuous longer period of student teaching. Throughout such an extended practicum, the subjects of this study submitted critical incidents in the supervision of their student teaching. The incidents were categorized according to an amended version of Broudy's (1965) problems of practice comprising the education profession and the categorization compared with that obtained in a distributed practicum setting. Extended practicum student teachers, like their distributed practicum counterparts, submitted incidents unevenly across the categories. Also, they submitted significantly fewer management-organization type incidents and significantly more interpersonal incidents than distributed practicum student teachers, although the latter were less likely to be negative. Among secondary extended practicum student teachers there was a tendency to submit more management-organization, more teaching-learning and fewer interpersonal critical incidents than elementary extended practicum student teachers.

This research was undertaken to study critical incidents in the supervision of student teachers engaged in an extended practicum or internship experience. It followed an earlier phase of the same project (Housego & Boldt, 1985) which found such incidents reported by student teachers, sponsor teachers, and faculty supervisors engaged in a series of shorter school experiences, a distributed practicum, to be very unevenly spread over a set of categories based on Broudy's (1965) problems of practice in the education profession. The Broudy categories—aims and objectives, organization-management, curriculum, teaching-learning, and professional content—were amended through the addition of a sixth category encompassing incidents focused on the interpersonal relationship of the student teacher and his or her supervisors.

According to Broudy (1965), the problems of practice which he describes establish education as a unique profession. That being the case, one would expect these problems to be at the heart of the professional education of teachers and to constitute the major substantive content of their student teaching experience. Various reasons for the abundance of incidents in some categories and the absence or near absence of

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incidents in others—the nonrealization of these expectations in the distributed practicum study—were advanced (Housego & Boldt, 1985, pp. 120-121). The greater than expected number of incidents in the management-organization and in the interpersonal categories was particularly noteworthy. These emphases, it seemed, might be linked to the marginal nature of the student teacher's position (Clifton, 1979, p. 63) and to the often pressured and stressful relationship of the student teacher with his or her supervisors. The student teacher tries to please both the sponsor teacher and the university supervisor and, in addition, demonstrate a high degree of teaching competence, all within a relatively short time span.

In an extended practicum, the time limitations of the shorter distributed practicum are much reduced, if not eliminated. With additional practice time, one might expect a student teacher to become much more adept at handling management and organizational problems in the classroom. In addition, his or her interpersonal relationships with supervisors, particularly the sponsor teacher, could be improved, because there would be more time to clarify the role expectations held for student teachers. Even the pressures of evaluation could be somewhat lessened in an extended practicum with more time for the student teacher to respond to feedback from his or her supervisors, more time to demonstrate teaching competence, and more evidence on which to base important evaluative decisions.

These speculations as to the possible effects of extending the length of time spent in classroom practice prompted the planning of a study of the distribution of critical incidents in the supervision of student teaching over the amended Broudy categories during a longer period of practice in schools, a time span of months rather than weeks. In an extended practicum, would critical incidents in the supervision of student teaching be spread more evenly across the Broudy categories? Would negative interpersonal relations critical incidents in the supervision of student teaching be fewer in number?

Theoretical Perspectives

Student teaching is considered to be an important part of teacher education, an occasion when theory and practice are melded. Ideally, it is a time when student teachers learn to criticize their own classroom performances in the light of both the best craft rules available and research findings on teaching. Although research on supervision, particularly studies based on data provided by the participants in the supervisory process, was once limited (Zeichner, 1980, p. 46), this is no longer the case; in fact, one might say there is a substantial beginning research effort directed toward understanding the supervisory process and its effects within the larger context of the socialization of student teachers (Lortie, 1975; Zeichner & Grant, 1981).

Apart from studies of the effects of school experience on student teacher attitudes and control ideologies (Tabachnick & Zeichner, 1984; Tardif, 1985; Zeichner & Grant, 1981), a number of researchers (Fuller & Bown, 1975; Gibson, 1976; Tardif, 1985) have documented, in those learning to teach, a developmental sequence beginning with survival concerns, progressing to teaching situation concerns, and finally moving to concerns for pupil needs. It is thought that student teachers, particularly in a brief school experience, may be unlikely to progress beyond the first stage of survival concerns, unless they are given more opportunity to master the survival and technical type of problems of the first two stages and are stimulated to become more reflective about their teaching. Supervisors of student teachers face the task of assisting student teachers scale this developmental ladder, at least to the point of successfully dispatching the survival concerns to which attention must be given before it is directed to

lesson presentation and individual pupil needs.

Some attempt to address this problem has been made through exploring various models of supervision. Some models are based on analysis of the conceptual level and content of the dialogue of the postconference (Blumberg, 1977; Grimmett, 1981; Hunt, 1977-1978; Sprinthall & Thies-Sprinthall, 1983; Zeichner & Liston, 1985). Other models describe supervisory behavior and categorize various approaches to supervision (Glickman, 1981; Horwood, 1981; Housego & Grimmett, 1983; Olson, 1982). It is difficult to know which supervisory approaches are most effective and under which circumstances, and although supervisees' preferences for particular styles of supervision (Blumberg, 1977; Copeland, 1982; Nias, 1977) provide some guidance, more information about the kinds of supervisory interventions which are in fact made in various types of field experiences is required. In addition, it would be helpful to know how student teachers perceive supervisory interventions. What is helpful to them and what is not? The critical incidents technique has been used to study supervisory behaviors in several contexts—faculty supervision of high school household economics student teachers (Dirks, 1967), the supervision of student nurses in nursing practicum (Drachelet, 1981), and more recently the critical behavioral requirements of cooperating teachers (Copas, 1984). It is used in this study to collect information about the supervision experiences of student teachers in an extended practicum in order to permit comparison with the supervision experiences of student teachers in the previously described distributed practicum.

Methods and Data Sources

The critical incident technique (Flanagan, 1954) is designed to collect an extensive range of incidents from those who are in a position to report what facilitated or hindered the aim of an activity. In this study, the activity of ultimate concern was the teaching performance of student teachers. Since student teachers themselves are perhaps in the best position to make judgments as to the effects of various events on their teaching performances, their reports of critical incidents in the supervision of their student teaching were sought. In this study, a critical incident in the supervision of student teaching is a supervisory incident identified as having had an impact, positive or negative, on the activity of ultimate concern—the student teacher's teaching performance. An "incident" in the supervision of student teaching becomes a critical incident if the student teacher identifies it as having had such impact. The instrument used for collecting these incidents (see Appendix) does not unduly restrict the kind of incident which might be reported; accordingly, it was expected that student teachers would be able to document incidents representing the full range of Broudy's categories if, in fact, these incidents were perceived as occurring in a notable way in their supervision.

Broudy's categories, which lie in the public domain, were used instead of more idiosyncratic categories drawn on the basis of the incidents themselves, as is the common practice in the Flanagan critical incidents method. They have been accepted over time as constituting a rationalized reconstruction of professional activity in education. Put another way, the categories represent the accepted spectrum of intended activities comprising the education profession. Consequently, classifying the incidents according to these categories is a check on the congruency of intents and reality, something of a cross-check on the comprehensiveness of the student teaching experience as mirrored in critical incidents selected from it.

Student teachers enrolled in an extended practicum, an internship experience, were asked to take part in this study. Before consenting, they were involved in a work-

shop session in which the purpose and procedures of the research and the concept of a critical incident in student teaching supervision were explained, and practice in recording a few dramatized incidents was provided. Seventeen student teachers in a newly established elementary internship program and 10 student teachers in a secondary internship, in its fifth year of operation, became regular participants in the project. On a weekly basis they contributed reports of critical incidents in the supervision of their student teaching by their sponsor teachers and faculty supervisors.

The elementary interns, with a median age of 21 and ages ranging from 20 to 33 were slightly younger than the secondary ones, whose median age was 23 and whose ages ranged from 21 to 45. The elementary interns had more uniform previous educational experiences—generally two previous practica—whereas those in the secondary pattern had had from 0 to 3 previous blocks of school experience. All the elementary interns, and all but one of the secondary interns, were in the fourth year of a four-year education degree program. The one secondary intern participating in the project who was a transfer to the Faculty of Education after a previous degree was, therefore, the only participant with no school experience.

The elementary and secondary internship programs are alike in terms of their location, the monthly stipend provided student teachers, and the interview process by means of which participants are selected by school principals. In both programs student teachers are supervised by their sponsor teachers and by faculty members who are also their course instructors.

The elementary and secondary internship programs differ somewhat. Whereas secondary interns are located in schools from September to April, teaching half-day and taking courses the other half, elementary interns teach over the whole day with the exception of Fridays, when they pursue coursework on campus. In addition, they return to campus for coursework for a month before Christmas. Secondary interns work continuously with the same classes, generally in two subject areas; elementary interns work before Christmas with one sponsor teacher and class and after Christmas with a second sponsor teacher and class, generally at a different grade level.

In order that some probable antecedents of the reported critical incidents might be explored, each student teacher was asked to complete a brief information sheet providing demographic data and a description of his or her interpretation of the roles of the sponsor teacher and the faculty supervisor in the extended practicum.

The elementary and the secondary critical incidents in the supervision of student teaching were systematically collected on a weekly basis and edited. They were classified independently and with no disagreement by two persons according to the amended Broudy categories which were validated in the previously mentioned earlier study (Housego & Boldt, 1985). The total number of incidents, both elementary and secondary, in each category was determined, and the percentages of incidents in each of the six categories compared with those found in the distributed practicum setting of the first study. Differences were tested for significance.

Report and Discussion of Findings

During their internship year, the 17 elementary students reported 224 and the 10 secondary student teachers 179 critical incidents in the supervision of student teaching. Tables 1, 2, and 3 present, respectively, the distribution over the six categories of the elementary incidents, the secondary incidents, and the total number of critical incidents collected in the extended practicum. Table 4 (Housego & Boldt, 1985, p. 118) presents the distribution of incidents over the same categories in a distributed practicum.

The tables indicate that the elementary and secondary interns separately, as well as in a total group, like the students of the previous study (Housego & Boldt, 1985), did not report incidents in their supervision experience having to do with aims and objectives, curriculum or professional content at the level of frequency which might be expected in the internship phase of a professional, integrated program. As in the previous study, student teachers reported the greatest numbers of critical incidents in the areas of organization and management, the basic elements of teaching-learning strategies, and interpersonal relationships with their supervisors.

The impression that emerges from a close examination of both the content of the incidents and the tables is that, in both the extended and the distributed practica, much of the substantive content of previous professional training was not considered noteworthy enough by any of the three parties involved—the student teacher, the sponsor teacher, or the university supervisor—to be made the focus of supervisory interaction frequently and thereafter reported in critical incidents. This finding is consistent with Tabachnick and Zeichner's (1984) description of the instrumental perspective, which has emerged in various studies of the impact of student teaching experience on the development of teaching perspectives by student teachers—"what works in the short run to get the class through the required lesson in a quiet orderly manner becomes the major criterion for evaluating a teaching activity" (p. 30).

The difficulty of linking university coursework and practicum experiences and the likely predominance of the instrumental perspective seem apparent as one analyzes the content of the collected critical incidents. Presumably, if university classroom work focuses on problems of practice in the education profession, these problems should be highlighted during actual practice in the classroom, particularly over an extended period of time. The tables, however, reveal an uneven distribution of reported critical incidents over the problems of practice, and leave one to speculate about the reasons for the seeming absence of attention to some very significant issues.

Part of the problem may be rooted in the dynamics of the interaction between sponsor teacher and student teacher. According to Zimpher, de Voss, and Nott (1980, p. 13), neither sponsor teachers nor student teachers place high priority on observation time for student teachers. Instead, in less than a week students become involved in full-time teaching. Moreover, interaction between sponsor teachers and their student teachers reveals a conscious avoidance of conflict and a tendency not to engage in substantive discussion (Olson, 1982; Tabachnick, Popkewitz & Zeichner, 1979-1980). This is not surprising if, as Book, Byers, and Freeman (1983) suggest, preservice teachers feel no strong need to acquire a knowledge base in pedagogy in order to become effective teachers. They are confident in their own abilities and prefer to try to show immediately that they can do the job, a point of view in keeping with the previously mentioned instrumental or "how to" perspective concerning student teaching.

In an attempt to account for the state-of-affairs represented in the tables, the questionnaire data collected were carefully examined for possible antecedents. No clear relationships could be established, although one factor seems to stand out as suggestive. Generally, both elementary and secondary student teachers failed to recognize a strong training role for their sponsor teachers or university supervisors. University supervisors were seen as resource persons, evaluators, liaison persons, and sources of support, but not as persons whose responsibility it was to ensure that classroom practice was carried on at a high professional level. Surprisingly, none of the elementary and only one of the secondary student teachers reported that either the

TABLE 1

Categorization of Critical Incidents (Elementary)

Category	Type of Incident: Positive %	Positive f	Negative %	Negative f	Total %	Total f
I. Aims and Objectives	1.2	2	0.0	0	0.9	2
II. Organization-Management	44.1	75	15.1	9	37.5	84
III. Curriculum	0.0	0	0.0	0	0.0	0
IV. Teaching-Learning	20.0	34	1.9	1	15.6	35
V. Professional Content	1.2	2	0.0	0	0.9	2
VI. Student teacher-Supervisor Interpersonal Relationships	33.5	57	83.0	44	45.1	101
Total	100.0	170	100.0	54	100.0	224

TABLE 2

Categorization of Critical Incidents (Secondary)

Category	Type of Incident: Positive %	Positive f	Negative %	Negative f	Total %	Total f
I. Aims and Objectives	0.7	1	4.7	2	1.7	3
II. Organization-Management	47.5	65	18.6	8	40.6	73
III. Curriculum	1.5	2	0.0	0	1.1	2
IV. Teaching-Learning	24.1	33	11.6	5	21.1	38
V. Professional Content	3.6	4	2.3	1	3.3	5
VI. Student teacher-Supervisor Interpersonal Relationships	22.6	31	62.8	27	32.2	58
Total	100.0	136	100.0	43	100.0	179

sponsor teacher's or the university supervisor's role included providing criticism of a student teacher's teaching performance. In addition, the expectations student teachers held for university supervisors did not include their integrating the learning acquired in the university classroom with school experience. It appears that student teachers, generally, may not expect either sponsor teachers or university supervisors to provide critical analyses of their teaching performances, a situation which may be comfortable for some sponsor teachers who may want to avoid this task, and somewhat uncomfortable for many university supervisors who usually expect to perform this function (McIntyre, 1984). As Kagan (1987) reports, student teachers prefer "facilitative" supervision.

Comparing the percentages of incidents in the six categories reported by the subjects of the distributed practicum study with those reported by the subjects involved in an extended practicum (see Figure 1), only one significant difference is apparent. As expected, student teachers in the extended practicum contrasted with

TABLE 3

Categorization of Critical Incidents
(Combined Elementary and Secondary)

Category	Type of Incident					
	Positive		Negative		Total	
	%	f	%	f	%	f
I. Aims and Objectives	1.0	3	2.1	2	1.2	5
II. Organization-Management	45.7	140	17.5	17	39.0	157
III. Curriculum	0.6	2	0.0	0	0.5	2
IV. Teaching-Learning	21.9	67	6.2	6	18.1	73
V. Professional Content	2.0	6	1.0	1	1.7	7
VI. Student teacher-Supervisor Interpersonal Relationships	28.8	88	73.2	71	39.5	159
Total	100.0	306	100.0	97	100.0	403

those in the distributed practicum reported a significantly lower percentage of critical incidents in the organization-management category. Even so, this category still drew 39% of the reported critical incidents in the supervision of student teaching. The substantial number of management and organization incidents in both practicum patterns seems understandable in light of other evidence of the importance of management and control. Tardif (1985) identifies control as an integral part of the student teacher's "teacher identity." Staab (1984) documents student teachers' insecurity with respect to classroom management. She found that they rated themselves lower on this aspect of their performances than on personal qualities, preparation for instruction, or the use of teaching skills. In addition, Applegate and Lasley (1985), in a factor analytic study of the problems facing early field experience elementary student teachers, identified management as a major concern—the first of seven factors. Further afield, class management was found to be one of the three most pressing areas of professional competence to be studied in the British Teacher Education Project begun in 1976 (Wragg, 1985). Wragg asserts that, "Inability to control a class is the single most common reason for failure of new teachers and it is frequently cited as a major worry by student teachers" (p. 202). It appears that organization and management are high priority concerns for Canadian, American, and British teachers and student teachers.

Contrasting Tables 1 and 2, one notes two tendencies. First, within the extended practicum, secondary student teachers reported proportionately more critical incidents in the organization-management category than did elementary student teachers. This may have occurred because older pupils present a greater management challenge for student teachers or perhaps because the pressures to establish formal control may be greater in secondary schools. Still, neither elementary student teachers nor secondary student teachers in the extended practicum contributed organization-management incidents to the degree they were found in the distributed practicum study in which nearly half of the total number of incidents was in this category. This could be interpreted as a sign that student teachers in the extended

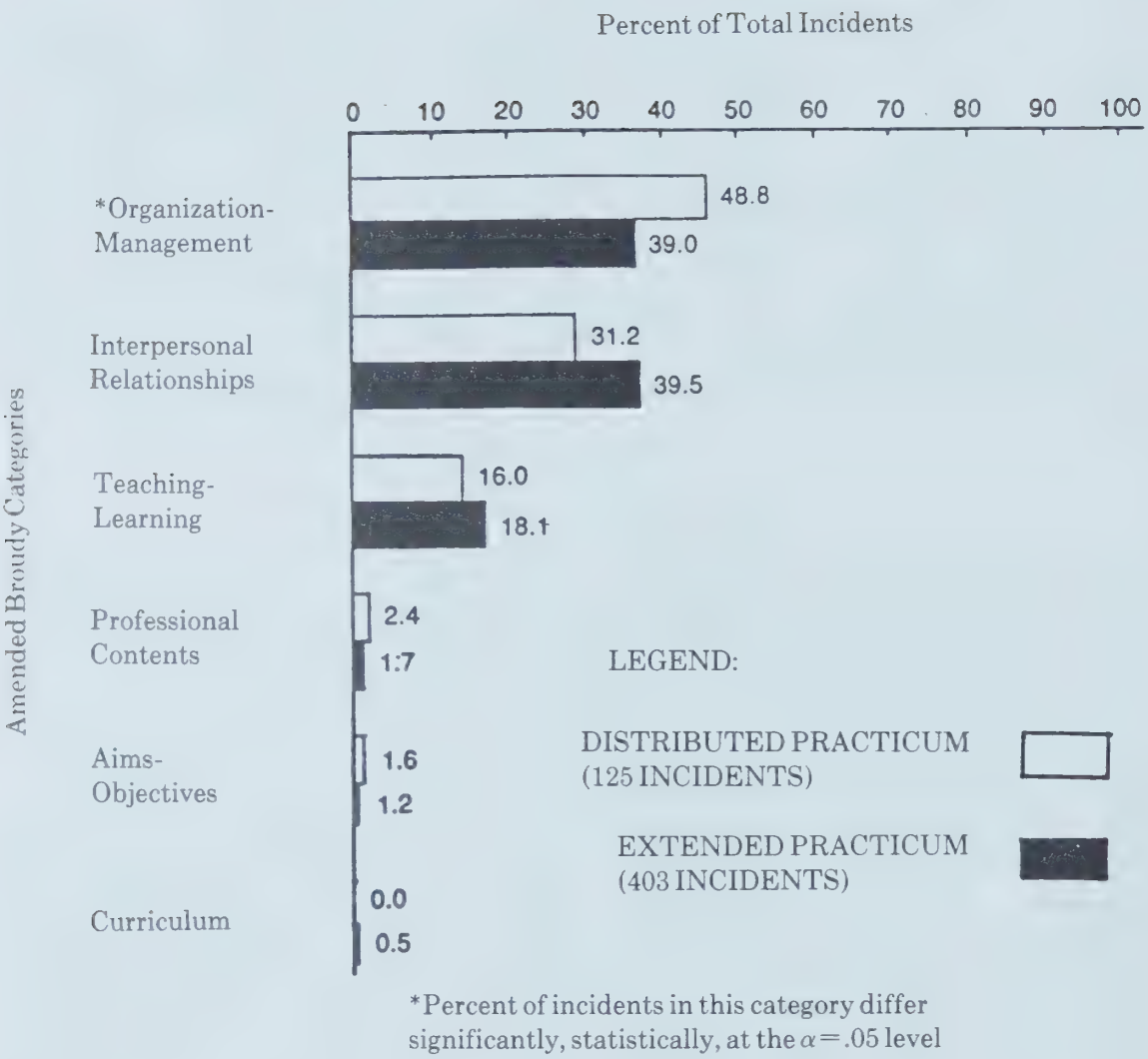

Figure 1: Comparison of the Extended Practicum and Distributed Practicum Distributions of Critical Incidents over the Amended Broudy Categories

TABLE 4

Categorization of Critical Incidents in Distributed Practicum Study

Category / Subcategory	Type of Incident: Positive %	Positive f	Negative %	Negative f	Total %	Total f
I. Aims and Objectives	2.0	2	0.0	0	1.6	2
II. Organization-Management	57.4	58	12.5	3	48.8	61
III. Curriculum	0.0	0	0.0	0	0.0	0
IV. Teaching-Learning	19.8	20	0.0	0	16.0	20
V. Professional Content						
1. Repertory Content	1.0	1	0.0	1	0.8	1
2. Pedagogical Content	2.0	2	0.0	0	1.6	2
VI. Student teacher-Supervisor Interpersonal Relationships	17.8	18	87.5	21	31.2	39
Total	100.0	101	100.0	25	100.0	125

practicum may begin to give less attention to the "survival" concerns so evident in early practice. Secondly, secondary extended practicum student teachers also submitted more critical incidents in the teaching-learning category than their elementary counterparts, perhaps reflecting a more intense subject matter emphasis in secondary schools.

Interpersonal relationships between student teachers and their sponsor teachers or their university supervisors are very important in the student teachers' responses to their school experiences. Within the extended practicum sample, secondary student teachers reported a lower percentage of interpersonal incidents, 32.2%, as opposed to the 45.1% reported by elementary subjects. In both groups the interpersonal incidents are slightly less than half negative, 43.6% and 46.6% respectively. Although elementary student teachers reported more critical incidents in the interpersonal category than secondary students did, one cannot conclude their interpersonal relationships with supervisors were more troubled. Elementary student teachers as a group simply appeared somewhat more sensitive to the interpersonal dimension of their experiences. This may have been a consequence of the greater child- or person-focused nature of their programs as contrasted to the stronger subject matter emphasis of secondary programs. Alternately, one might attribute it to the predominance of female subjects in the group, subjects who would therefore have been socialized to be more sensitive to the interpersonal dimension of their experiences (Macoby & Jacklin, 1974; O'Neil, 1985).

Continuing to focus on interpersonal critical incidents and contrasting Tables 3 and 4, one notes that there were more interpersonal incidents submitted by the subjects of the extended practicum than by the subjects of the distributed practicum study. The incidents, however, were not so likely to be negative, perhaps because the time available for extended practicum student teachers and their supervisors to work out relationship problems and to adjust comfortably to mutual role expectations was longer. Also, negative critical incidents may have occurred less frequently in a situation in which there was some preparation of sponsor teachers and some serious effort to match student teachers with sponsor teachers as well as an interviewing process which helped to clarify expectations.

Implications for Teacher Education

The findings of both the present study and its earlier counterpart (Housego and Boldt, 1985) highlight the need to sensitize supervisors of student teaching, both sponsor teachers and faculty supervisors, to the importance of the full spectrum of the problems of practice which comprise the education profession, in order that they be regularly addressed in the supervision process. A selection of the incidents collected in these studies has been used in a workshop experience designed to do this. It also allows supervisors to share the student teacher's perspective on the supervision experience. Understanding which interventions have been perceived by student teachers as helpful or not helpful may increase supervisors' sensitivity and allow them to be more effective—to make more positively perceived and fewer negatively perceived interventions, thereby contributing to the improvement of the student teacher's classroom performance. Such sensitivity might also reduce the incidence of interpersonal problems in the supervisory relationship. Indeed, increasing awareness of student teachers' perceptions of their supervision experiences could be an important activity within a preparatory program for sponsor teachers, the sort of program which might produce the desirable results described by Copeland (1977). Copeland found that student teachers who were placed in the classes of sponsor teachers who were prepared for their role were more likely to take the risks required to test and acquire laboratory-learned teaching skills, regardless of whether the sponsor teachers demonstrated the skills. Student teachers who saw the skills demonstrated by unprepared sponsor teachers were less likely to acquire the skills, and those who had sponsors who were neither prepared nor likely to demonstrate the skills, of course, had little chance of acquiring such skills. Student teachers may benefit through submitting critical incidents in the supervision of their teaching, a process which could lead them to be more reflective about teaching, more likely to think about the consequences of their behavior and ways of achieving alternate outcomes.

Further, the findings of this study highlight a need in the overall professional training program for clarifying the university supervisor's role: bringing classroom practice and professional knowledge together, culminating in a high level of professional classroom practice (Griffin, 1982).

It is interesting to speculate how this could be accomplished. To begin with, it is recognized that many learnings about teaching are tacit and not subject to explicit recall on demand by the student teacher. The task of the supervisor, in part, is to illuminate these learnings through focused discussion, in order that they be more deliberately applied in the classroom. Although tacit learnings can be functional without this unveiling, if the supervisor ensures that they are tested in the classroom, it is anticipated that the student teacher would be encouraged to become more reflective about his or her teaching. Part of the university supervisor's task is to transform research-based knowledge of effective teaching into a form suitable for interpretive use; that is, to link research findings to the substantive problems of classroom teaching. Through a deliberate effort to concretize abstractions from theory and through the technology of lab-like exercises designed to test such ideas in the classroom, a powerful addition to the repertoire of craft rules usually acquired through practice and supervision could be added. Instead, the evidence of the present study, like its earlier counterpart (Housego & Boldt, 1985), seems to point to a preconception and enactment of student teaching supervision which appears not to recognize as fully as expected the intellectual maneuverability that knowledge used interpretively can provide the student teacher.

Limitations

Student teachers' perceptions of their supervision by faculty supervisors and sponsor teachers comprise but one important view of supervisory interaction. Although other perspectives might have been useful, within the design of this study there was no plan to obtain information from sponsor teachers or faculty supervisors directly. Instead, student teaching office personnel provided sponsor teachers and faculty supervisors with information concerning the study and arranged "clearance." In order to secure their full cooperation, student teachers were guaranteed anonymity and were also assured that their grades were not a subject of study and would in no way be affected by their participation in the project. These conditions precluded investigating relationships between the nature of the incidents submitted and student teaching grades or attempting to relate sponsor teacher or faculty advisor characteristics and behaviors to the critical incidents submitted by their supervisees.

Conclusion

Studying student teaching supervision using critical incidents methodology is one approach to understanding something further of the pattern of student teacher socialization, particularly as it unfolds in supervisory interaction. With a fuller understanding of how student teachers respond to supervisory behaviors, it may become increasingly possible to help them progress beyond the survival concerns and the "how to" perspective which characterize early practice.

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Appendix

Code Number: _____

Response Sheet

Critical Incidents in the Supervision
of Student Teaching in an Extended Practicum

Date recorded: _____

1. What led up to this incident? (the context of this incident)

2. Which supervisor was involved?

   ☐ faculty supervisor ☐ sponsor teacher

3. What behavior(s) on the part of your sponsor teacher or your faculty supervisor do you think led to improvement in your teaching or, on the other hand, delayed or impeded your progress? (the incident itself)

4. Classify the above incident by checking ONE of the boxes

   ☐ positive incident ☐ negative incident

The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 260-274*

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Burnout in Secondary School Teacher Coaches

The purpose of this study was to investigate the degree of burnout among secondary school teacher coaches and to identify factors which contributed to this burnout. The subjects for the study were 75 secondary school teacher coaches from three school divisions in Alberta. The subjects responded to an adapted version of Maslach's Burnout Inventory and their subscale scores were then used to place them in one of Golembiewski's eight phases of burnout. In addition, qualitative data on the causes of burnout were obtained through interviews with selected subjects. The findings of the study show that Golembiewski's phase model was useful for identifying factors relating to higher levels of burnout in teacher coaches. In this study the gender of the teacher coaches, their age, the size of the school they worked in, the amount of school administration support for coaching, and the compensation, recognition, and rewards for coaching were all shown to be related to higher levels of burnout.

In recent years considerable interest has developed in a phenomenon which is referred to as burnout. It has been called *inter alia* the "crisis of the 80s" and the "disease of modern life" (Maslach, 1983, p. 29). Burnout has been seen as a reaction to and a consequence of chronic occupational stress within certain professions which involve what is termed "people related work" (Maslach, 1978). Maslach, who has done pioneering research on the area of burnout, has examined the phenomenon in a number of people-related professions and has determined that it is comprised of three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. In

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describing the phenomenon, Maslach (1982) states:

> Burnout is a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do people work of some kind. It is a response to the chronic emotional strain of dealing extensively with other human beings, particularly when they are troubled or having problems. Although it has some of the same deleterious effects as other stress responses, what is unique about burnout is that the stress arises from the social interaction between helper and recipient. (p. 3)

It seems reasonable to suggest that problems associated with this type of social interaction, between helper and recipient, may also be found in the interaction of those individuals who teach and coach in our schools. However, a search of the literature shows that although there have been a number of prescriptive articles (cf. Austin, 1981; Kohlmaier, 1981; Malone & Rotella, 1981), there have only been two studies (Haggerty, 1982; Wilson & Chambers, 1983) that have examined burnout as experienced by coaches. Haggerty (1982) investigated the degree of burnout experienced by Canadian university coaches. However, his study was limited to coaching rather than the entire work-related stresses of university coaches. His findings show that the higher the coaches measured levels of burnout the more these coaches had a negative reaction to the coaching environment and the more they reported adverse physiological and psychological reactions to coaching. He suggested that coaching success as measured by win/loss record did not have an effect on burnout levels. Coaches who perceived their jobs to be stressful reported significantly more feelings of emotional exhaustion and depersonalization. Haggerty also reported that gender was the only biographic characteristic related to burnout, with female coaches reporting significantly less personal accomplishment than male coaches. Those individuals who coached female athletes also reported less intense feelings of personal accomplishment, probably due to the generally low status given to female athletic programs in Canada. The Wilson and Chambers (1983) study was also conducted on Canadian university coaches and showed that "approximately 20% . . . reported serious burnout symptoms which would affect their job performance and the quality of their daily lives" (p. 1).

These two studies show, then, that coaches often do experience symptoms of burnout. However, as Haggerty (1982) pointed out:

> the coach's duties in coaching contributed to burnout, but further investigation must consider the effects of an individual's total work duties and responsibilities on the development of burnout. (p. 87)

One area where the effects of coaching as a part of an individual's total work and other related factors are likely to lead to burnout is in the country's high schools. Recent budget and staff cutbacks have made it very difficult for high school physical education teachers and coaches to meet the demands of operating a high quality athletic program. As resources within their departments are reduced, there is pressure on schools to condense existing programs. This conflict between supply and demand has placed a great deal of stress on the physical education and athletic staff in our secondary schools. The Canadian school population peaked in 1977 at 1.7 million and has declined since that time and is predicted to decline on into the late 1980s when a population of 1.3 million will be reached (Macintosh, 1979, p. 31). Declining student populations are responsible for the staff cutbacks, closure of schools, and the surplus of teachers which have subsequently resulted in the lack of job opportunities for new physical education graduates. The reduction of recent graduates into secondary schools has affected physical education and athletic programs. As Macintosh points out:

> The influx of the recent graduate has been the single most important vehicle for the transmission of new knowledge and technique in sport and physical activity from the universities to the schools. In addition, the enthusiasm and vigour of these young persons, as is the case in all professions has been the source of inspiration and revitalization for physical educators already in the system. (p. 31)

The present situation has serious implications for the athletic programs in secondary schools. Today, physical education department heads are finding it more and more difficult to staff their existing interschool sport programs (Macintosh, 1979). In many situations a handful of coaches are attempting to run the entire interschool athletic program. "Too few" are attempting to do "too much." This conflict has been identified as being a very real threat to interschool athletic programs and should be the concern of all physical educators and administrators. Macintosh expressed his concern for interschool athletics as a result of the present staffing problems:

> A large number of the interschool coaching force has traditionally been those young physical educators and other teachers recently recruited into the teaching field. After a number of years of coaching, teachers have tended to drop out of coaching, opting for less onerous extracurricular responsibilities. In addition the struggle between teacher federations, which are advocating a reduction in the teacher-student ratio as an alternative to redundancies in the face of falling enrollment, and school boards which face citizen pressure to reduce school costs consistent with falling enrollment, will probably result in a lower teacher morale and greater reluctance on the part of teachers to assume coaching roles. During the next decade when the influx of young new teachers into most secondary schools will be minimal, critical shortages of the interschool coaches are likely to develop. (p. 31)

It is, then, a critical period for high school athletics. Retention of the existing high school coaches is essential in order for the educational component as well as the continuity and quality of our interschool sport programs to be maintained. Thus the issue of burnout becomes of greater importance when considering the future operation of the high school programs. Efforts to maintain the morale and enthusiasm of the existing coaches is a key issue in the future of interschool athletics. The present teaching-coaching environment may in fact be contributing to the susceptibility to burnout in the teacher-coach. However, before any recommendations can be made, the present situation must be investigated. To what degree does burnout exist among secondary school teacher coaches? What are the contributing factors leading to burnout? It is only through the identification of these factors that better incentives can be provided for existing school based personnel. Consequently the purpose of the study reported here was to investigate the degree of burnout among secondary school teacher coaches and to identify factors which may contribute to burnout. More specifically the purpose of the study was:

1. To determine the extent to which burnout was experienced by a sample of teacher coaches and to compare these findings to Maslach's scores for her three burnout subscales and to the scores used by Golembiewski to establish his phase model of burnout.
2. To categorize the sample of teacher coaches into the eight phases of burnout developed by Golembiewski.
3. To examine how selected biographic factors influenced the teacher coaches phase of burnout.
4. To examine the influence of selected school-related factors on the teacher coaches phase of burnout.

Subjects

The subjects for the study were secondary school teacher coaches from three school divisions operating in the province of Alberta. The teacher coaches had to have coached at least one major sport at the senior high school level for two of the past four years. In addition, one of these years of coaching must have been in the last two years. The teacher coaches also had to be full-time employees of their particular school division. Ninety-two teacher coaches within the three school systems selected met these requirements and consequently were included in the study. However, 17 of them were unable or unwilling to participate in the study. Consequently, the final study sample consisted of 75 teacher coaches.

Research Instruments

The research was conducted using three sequential and interrelated components; the Adapted Maslach Burnout Inventory, Golembiewski's Phase Model of Burnout and a semi-structured interview.

Adapted Maslach Burnout Inventory

The Maslach Burn-Out Inventory (MBI) is the most widely used scale in researching burnout (Paine, 1983, p. 15). The MBI is a questionnaire containing 25 Likert-type items which measure the three dimensions of burnout mentioned earlier; emotional exhaustion, depersonalization, and personal accomplishment. The items in the emotional exhaustion subscale describe feelings of being emotionally extended and exhausted by one's work. The items in the depersonalization subscale describe "an unfeeling and impersonal response toward recipients of one's care or service" (Maslach & Jackson, 1981a, p. 101). For both of the emotional exhaustion and depersonalization subscales, higher mean scores correspond to higher degrees of experienced burnout. The subscale of personal accomplishment measures feelings of competence and successful achievement in one's work with people. In contrast with the other two subscales, lower mean scores on Maslach's personal accomplishment subscale correspond to higher degrees of burnout. Maslach used two dimensions, frequency and intensity, to describe each statement in the MBI. Golembiewski (personal communication, May 1984) stated that these dimensions have been found to have a high correlation and that respondents were "somewhat confused" by the use of both of them. Similarly, Haggerty (1982), who adapted the MBI to the coaching environment, reported that there was a moderate to high relationship between how frequently coaches experienced various feelings and how intensely these feelings were felt. Haggerty also reported that slight rewording of the MBI for the coaching population did not affect the validity or the reliability of the instrument. Thus the wording in Haggerty's adapted version of the MBI was used for this study. Following the recommendation of Golembiewski, Munzenrider, and Carter (1983), respondents were not asked to rate each item twice, once for frequency and once for intensity. Rather they were asked to respond to each item by marking, on a seven-point Likert scale, the extent to which each item in the adapted MBI was like them or unlike them. As Golembiewski, Munzenrider, and Carter (p. 464) suggest, this type of revisionism does not "distort Maslach's intent or results." The adapted MBI was administered along with a short questionnaire that solicited biographic and demographic data about the teacher coaches and also information about their coaching situation, for example, level coached, gender coached, and so forth.

Golembiewski's Phase Model of Burnout

Golembiewski (1983a) has used the MBI to develop a phase model approach to burnout. In this model, burnout is conceptualized as a process rather than as a single event and eight phases of burnout are outlined. Golembiewski reported that "as burnout phases progress, numerous indicators of the quality of work life deteriorate" (p. 11). Golembiewski suggested that through studying burnout from a phase model, different causes and precursors of burnout may be identified.

Golembiewski's model assumes different priorities or prepotencies to Maslach's three subscales. Depersonalization is seen as the least potent contributor to burnout followed by personal accomplishment and finally emotional exhaustion. The three MBI subscales are dichotomized as either high or low using the group median as the cutoff. Based on the prepotency of the three subscales, an eight phase model of burnout was developed (see Table 1). As suggested in Golembiewski's phase model approach, the respondents in this study were categorized according to their phase of burnout.

It is very important to note that to establish his phase model of burnout Golembiewski, unlike Maslach, reverses the scoring system for the items comprising the Personal Accomplishment subscale. Thus in Golembiewski's model, higher scores on Personal Accomplishment indicate higher levels of burnout. Golembiewski adopts this variant in order to bring consistency to the three subscales, that is, for each subscale, a higher score means a higher level of burnout. This format also allows Golembiewski to total the scores on the three subscales, and thus as the total score increases, the phase of burnout increases.

Semi-Structured Interview

The third component of the research instrument was a semistructured interview. The interview schedule was constructed in order to elicit data about areas which the literature has indicated may cause burnout. The first area dealt with information about the respondents, specifically their reasons for coaching and their athletic and coaching background. The second area was concerned with school-related factors contributing to burnout. Here, data were elicited on school size, the support school administrators gave to the interschool athletic program, compensation for coaching, and the amount of recognition given to coaching.

Method

The 75 teacher coaches were asked to respond to the Adapted MBI and fill out the brief questionnaire which requested biographic and demographic data and information about their coaching situation. In order to determine the degree of burnout in the teacher coaches, their responses to the Adapted MBI were coded onto optical scanning sheets and, using the SPSSx program, scores were generated for each of the Adapted MBI subscales. In order to determine which phase of burnout the teacher coaches fell into, their subscale scores were dichotomized and, based on these results, respondents were placed in one of Golembiewski's eight phases of burnout.

Twenty-one of the 75 teacher coaches who participated in the research were then selected to take part in the interview component of the study. The purpose of this component was to elicit data about possible determinants of burnout. The selection of interviewees was determined by their phase of burnout. Seven individuals were selected from the most extreme phase of burnout, phase 8. Seven individuals were selected from phase 4, and seven from phase 1. In phases 1 and 8, the interviewees were randomly selected. However, because there were only seven respondents in phase 4, all of

TABLE 1

Eight Phases of Burnout

	I	II	III	IV	V	VI	VII	VIII
Depersonalization	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Personal Accomplishment	Lo	Lo	Hi	Hi	Lo	Lo	Hi	Hi
Emotional Exhaustion	Lo	Lo	Lo	Lo	Hi	Hi	Hi	Hi

(From Golembiewski, Munzenrider, & Carter, 1983)

them were interviewed. Golembiewski (personal communication, May, 1984) has suggested that these three phases be selected rather than a small sample from each phase of burnout. These phases are seen as providing a balanced sample in that they represent respectively high, moderate, and low levels of burnout.

Results and Discussion

Degree of Burnout in Secondary School Teacher Coaches

Maslach and Jackson (1981a) conceptualized burnout as a continuous variable, ranging from low to moderate to high degrees of experienced burnout. It is not a dichotomous variable which is either present or absent. For Maslach, a high degree of burnout is reflected in high scores on the Emotional Exhaustion and Depersonalization subscales, and in lower scores on the Personal Accomplishment subscale. A moderate degree of burnout is reflected in moderate scores on all three subscales. A low degree of burnout is reflected in low scores on the Emotional Exhaustion and Depersonalization subscales, and in high scores on the Personal Accomplishment subscale. Maslach and Jackson (1981b) indicated that scores are considered to be high if they are in the upper third of the normative distribution, moderate if they are in the middle third, and low if they are in the lower third. Maslach established norms for the three MBI subscales which have led to meaningful comparisons being made across different disciplines and populations.

The subscale means of the teacher coaches in this study can be compared to Maslach's norms for each of the MBI subscales. Thus it is possible to gain an understanding of the degree of burnout exhibited by the teacher coaches. The mean score on the Depersonalization subscale for the teacher coaches was 11.2; this compares to Maslach's mean scores of 9.4 (frequency) and 11.7 (intensity). This score places the teacher coaches in the middle third of Maslach's normative distribution for this subscale, thus indicating a moderate level of experienced burnout. In terms of Personal Accomplishment, the teacher coaches had a mean score of 44.7 as compared to Maslach's mean scores of 36.0 (frequency) and 39.7 (intensity). This score places the teacher coaches in the lower third of Maslach's normative distribution and thus means they are in the low level of experienced burnout as measured by this subscale. The teacher coaches mean score on the final subscale, Emotional Exhaustion, was 29.4 as compared to Maslach's scores of 24.0 (frequency) and 31.6 (intensity). This placed the teacher coaches in the middle third of Maslach's normative distribution for the Emotional Exhaustion subscale and so indicated a moderate level of experienced burnout. Overall then, when compared to Maslach's normative distributions, the teacher coaches in this study experienced a moderate to low range of burnout.

When the Adapted MBI mean scores are compared with those used by Golembiewski (1983b) in his phase model of burnout, we find the following results. The mean score for Depersonalization for the teacher-coach sample of this study was 11.2. The mean for this subscale was lower than that of Golembiewski who reported the mean for Depersonalization to be 18.2. The score obtained in this study would only fall in the 18.8 percentile of Golembiewski's study. Thus the teacher coaches in this study experienced less Depersonalization (thus contributing to lower levels of burnout) than Golembiewski's sample. The mean (20.8) for the subscale Personal Accomplishment was also lower than that reported by Golembiewski (25.8). A score of 20.8 would have fallen into the 25.2 percentile range of Golembiewski's norms. Because these figures were obtained by reversing the scoring system on those items which make up this subscale, a higher score means a higher level of burnout. Teacher coaches then experienced a greater sense of Personal Accomplishment (thus contributing to a lower level of burnout) than Golembiewski's sample. Finally, in terms of Emotional Exhaustion, the teacher coaches' mean (29.4) was found to be higher than the mean reported by Golembiewski (22.8). A score of 29.4 would fall in the 71.7 percentile range of Golembiewski's norms. Thus teacher coaches experienced greater Emotional Exhaustion, which contributed to a higher level of burnout than Golembiewski's sample.

Overall, the results of the study, when Adapted MBI scores are compared to Golembiewski's findings, indicated that the secondary school teacher coaches experienced less Depersonalizaton (thus contributing less to burnout), a greater sense of Personal Accomplishment (thus contributing less to burnout), and greater Emotional Exhaustion (thus contributing more to burnout). This would suggest that the teacher coaches of this study experienced less burnout than those individuals in the large federal (US) government agency studied by Golembiewski. However, despite these lower levels of burnout, they are still significant, and it is nonetheless important to offer explanation for them for as Ratsoy, Sarros, and Aidoo-Taylor (1986, p. 282) point out "any form of distress in education is a matter of concern."

In explaining the findings, then, it seems reasonable to suggest that, due to the nature of the teaching-coaching profession, reporting feelings of Depersonalization may be contrary to professional ideals. The low score on Depersonalization may reflect a social desirability effect. In other words, it would be more socially acceptable for workers in a bureaucratic agency to report feelings of Depersonalization than it would be for teacher coaches working with young student athletes. However, it is also suggested that the low score on Depersonalization may in fact reflect teacher coaches' feelings and association with the student athletes with whom they work. The results of the content analysis of the interview data of this study indicated that the student athletes do not contribute to feelings of burnout. Instead, they are a source of satisfaction for the teacher coaches. The following excerpts were typical comments of the teacher coaches when interviewed about their feelings on their student athletes: "The students are my salvation," "I think they are one of the rewarding things about being in this profession." "Thank God for the kids! They're the best part of the job." This finding is consistent with those in a recent article by Blase and Pajak (1986, p. 317) who suggest that teachers experience a positive impact on their self-esteem and confidence from being able to successfully influence students.

It may also be suggested that the motivation of the student athletes versus the "clients" of the various workers Maslach and Golembiewski have studied may account for the greater sense of Personal Accomplishment reported by these teacher coaches. The comments of one teacher-coach interviewed in this study reflect the potential for feelings of Personal Accomplishment.

> I basically like the socialization with the kids. I like talking to them about what they can get out of sport, and what they are looking for in sport, and I really like the fact that in coaching you can get immediate results from hard work.

It is feasible, too, that the nature of coaching provides constant feedback to the coach as compared to the bureaucratic nature of the workers studied by Maslach and Golembiewski. This feedback goes beyond the immediate win/loss record for a given season. Coaches have a direct comparison of athletes' past performances and skills by which they (the coaches) can measure improvement. The feedback and intrinsic gratification coaches receive undoubtedly contribute to these feelings of Personal Accomplishment. As Stevenson (1984) points out:

> It seems clear that the central motivation for the extracurricular work comes overwhelmingly from the intrinsic reward which it provides. Teachers coach because of the satisfaction they derive from it. The satisfaction of achieving, of seeing the kids learn, improve and go on to better things. (p. 5)

Using Maslach's scoring convention, female teacher coaches reported lower scores ($\bar{X}=41.0$) on the Personal Accomplishment subscale than their male counterparts ($\bar{X}=45.0$); this difference was statistically significant at the .05 level. The finding corresponds to Haggerty's (1982) study of Canadian university coaches. He reported (p. 81) that male and female coaches had similar degrees of burnout for most subscales with the exception that "females reported less intense feelings of Personal Accomplishment than males." Since female coaches in this study primarily coached female teams, it is suggested that the lower mean score for female coaches may be explained by the lesser amount of attention usually given in high schools to women's athletic programs (cf. Hall & Richardson, 1982).

Female coaches interviewed in this study indicated that athletics was more of a central focus and priority among the high school boys than it was for the high school girls. One female coach reported, "it doesn't seem to mean as much to the girls. Their reasons for participation are different than the boys."

It is difficult to determine whether the emphasis girls place on high school athletics is the result of the coaching they receive or if, in fact, the reasons for participating on school teams are different as a result of the different socialization process. The recognition and profile of men's athletics are much higher than women's athletics (cf. Hall & Richardson, 1982). It is suggested that the support which accompanies this recognition may influence female coaches' sense of Personal Accomplishment.

As would be expected, coaches reporting that they had experienced a high degree of success over the past four years had the highest mean score (using Maslach's scoring convention) on Personal Accomplishment ($\bar{X}=48.9$). The mean score for coaches reporting "quite successful" teams was 45.5; and coaches reporting "moderately successful" teams had the lowest mean score ($\bar{X}=39.0$). Teacher coaches interviewed in this study indicated that their definition of success went beyond a simple win/loss definition. Thus a sense of accomplishment in teaching and coaching measured through participation of the students and the development of student athletes, as opposed to just the win/loss record, could explain the observed relationship between reported success and personal accomplishment.

The interview data suggest that the high score on Emotional Exhaustion reflects a work overload situation experienced by the teacher coaches rather than the cumulative product of feelings of Depersonalization and lower sense of Personal Accomplishment (as outlined by Golembiewski's prepotencies or priorities of the subscales). The work overload experienced by these teacher coaches appears to be a major contributor

to the reported burnout. This is consistent with two recent studies: one by Ratsoy, Sarros, and Aidoo-Taylor (1986) which examined organizational stress among district based administrators, principals and assistant principals, and nonadministrative school-based personnel; and one by Blase and Pajak (1986) which examined the impact of work life on the personal lives of school teachers. Both studies saw work overload as a key contributor to stress and a major factor that had a deleterious effect on the personal life of teachers. The finding is also supported by a study of school administrators by Sarros and Friesen (1987); their research identified work load as a key contributor to feelings of Emotional Exhaustion burnout.

Female coaches were particularly susceptible to high scores on the Emotional Exhaustion subscale (a mean of 33.6 as compared to 28.0 for male coaches); this was statistically significant at the .05 level. The traditional responsibilities, particularly for married females, of domestic activities as well as coaching and the lack of sufficient female teacher coaches may have resulted in their being placed in an even greater work overload situation than their male counterparts. This in turn probably contributed to the reported high level of Emotional Exhaustion.

The comparison of the mean scores based on marital status supports the findings of Maslach. Single coaches scored higher on Emotional Exhaustion than did married coaches (single $\bar{X}=33.2$; married $\bar{X}=28.5$). It is suggested that the single teacher-coach may have more of a tendency to overidentify or become overly involved in his or her work than teacher coaches whose family commitments restrict or limit their involvement. A comment from one coach exemplified how her commitment would change with marriage and a family.

> Although I enjoy coaching now, my priorities will change in the future when I have a family. My first priority will always be my family commitments, then teaching and then coaching. If there is not enough time for coaching, I won't coach.

Teacher coaches who had taught less than 50% physical education had a lower mean score (26.8) on Emotional Exhaustion than those who taught 50% or more physical education (31.7). This could be due to the fact that coaches in this study who were teaching more than 50% physical education, coached almost twice as many major sports than did coaches who taught less than 50% physical education. The former group reported coaching an average of 3.7 major sports over the past four years as compared to 6.1 major sports for coaches who had taught more than 50% physical education. Excessive involvement in coaching was reported as a major source of burnout among teacher coaches interviewed in this study. The responsibility for staffing the interschool athletic program falls on the shoulders of the physical education department. Physical education teachers reported that they were expected to coach: "It comes with the territory," "It's an expectation of the administration and it's an expectation I hold myself." Stevenson (1984) reported similar findings when he interviewed high school teacher coaches in eastern Canada.

> It is understood by everyone involved that this is what physical education teachers do. It is an expectation which is held by their colleagues in the physical education department. You coach because everyone coaches, and if you don't then someone else will have to do "your" load in addition to their own. And of course the students expect it. . . . Through a process of socialization, they have come to incorporate this extracurricular work as an expected component of the physical education teacher's role. (p. 3)

It may be seen, then, that the indicators of burnout among teacher coaches vary from other occupations. Essentially, teacher coaches experience less Depersonalization, greater Personal Accomplishment, and far more Emotional Exhaustion, mainly due to an overload situation.

When the scores of the subscales are dichotomized and used to place respondents into the phases of burnout as developed by Golembiewski, we find that just over 53% of teacher coaches fall in the upper four phases of burnout. As a result, although the teacher coaches in this study report experiencing less burnout than the respondents in both Maslach's and Golembiewski's studies, there are over half who fall into the upper phases of experienced burnout (see Table 2). Consequently, it becomes important to attempt to establish what factors contribute to these feelings of burnout.

Factors Influencing the Phase of Burnout in Secondary School Teacher Coaches

Initial studies on burnout focused on the differing psychological attributes of individuals and how these may be a cause of burnout. However, more recent work (cf. Caroll & White, 1983; Cherniss, 1980) has moved from this focus on individual human agents to a more structural approach. Consequently, rather than asking the question who is to blame for burnout, they are asking what is causing burnout. Maslach (1982) points out in reference to the *who* versus the *what* question of burnout that:

> the question points us in other directions that encourage us to substitute an analytical microscope for our people watching binoculars. Rather than just looking at defective people, we focus our attention on the situation in which they find themselves. (p. 9)

In this study a semistructured interview was used to collect data about a number of biographic and school-related factors which the literature has indicated may influence burnout. In this section, information is present on the influence of several of these factors, specifically in relation to an individual's phase of burnout.

An analysis of the gender of respondents in terms of their phase of burnout showed that 63.1% of the females in this study were in the upper four phases of burnout (V-VIII); this compares with 49.0% of males who were in similar phases. Female coaches in this study also reported coaching more sports over the previous four years than had their male counterparts. Female coaches had coached an average of six different sports as compared to males who had coached an average of 4.6 different sports over the past four years. It is feasible to suggest that the higher percentage of women in the upper phase of burnout is a result of the overload that these women carried in order to maintain the women's athletic programs in their schools. An extract from an interview with one female coach who was in Phase VIII of burnout exemplifies this.

> When I first started here I was the only woman on the physical education staff and there were all sorts of teams to coach. . . . I did everything. . . . But I'm beginning to not enjoy it so much, and feel that it is because I have done so much for so long.

In addition to the concern expressed by female coaches about their overload, all of those interviewed in this study noted that they experienced conflict between their family role and their coaching role. Those who did not have families indicated they could foresee a conflict with coaching when they started a family. This former type of conflict becomes more evident when the marital status of male and female coaches is compared to their phase of burnout. Seventy-five percent of married females were in burnout phases V to VIII whereas only 47.5% of males fell into these categories. As Pines and Aronson (1981, p. 87) have indicated, the expectations that society has traditionally set for women as homemakers, coupled with the additional expectations outside the home, have resulted in an "external situational stress and internal emotional stress, both affecting the working woman's self-perception as a competent human being." With the lack of opportunity for new physical education graduates in the teaching-coaching field, women's athletic programs will probably suffer more than men's. As overloaded women in the teaching-coaching profession begin to experience

TABLE 2

Frequency and Percentage Distribution of Coaches
Across the Eight Phases of Burnout

Phase	Frequency	Percentage
Phase I	15	20.0
Phase II	7	9.3
Phase III	6	8.0
Phase IV	7	9.3
Phase V	7	9.3
Phase VI	6	8.0
Phase VII	7	9.3
Phase VIII	20	26.6

burnout or as greater familial demands are placed on them, thus causing greater degrees of burnout, they are more likely to leave coaching. This will undoubtedly result in increased difficulties in staffing women's athletic programs. However, it is important to note that the point being made here is not just a problem for women; it is a structural problem which affects women in coaching because of the general societal expectation that they play the major role in domestic labor.

Another biographic factor which has been shown to influence the level of burnout is age. In this study the average age for coaches in Phase I of burnout was approximately five years older than those in Phase VIII. Similarly, the number of years coached at the secondary school level revealed that the mean for coaches in Phase VIII was 6.9 years as compared to 11.3 years for coaches in Phase I. The results of this study would appear to support Maslach and Jackson's (1981b) findings that younger and less experienced workers are more prone to burnout. The younger coaches in Phase VIII reported factors such as overly idealistic, overloaded, overcommitted, lack of confidence due to inexperience, and lack of security in their job as possible contributors to burnout. These factors are similar to those reported by other researchers in their studies of burnout (cf. Cherniss, 1983; Maslach, 1982; Pines & Aronson, 1981).

Several of these researchers have also indicated that the ability to recognize one's limitations and capabilities reduces the likelihood of burnout. Freudenberger and Richelson (1980) suggested that the greatest protection against burnout is self-awareness and recognizing the need for balance. This often comes with experience. A more experienced coach in one of the lower levels of burnout exemplified this when he noted, "When I first got into coaching I always felt that I had to prove myself as a coach and prove my team to others. As time progressed, I quickly dispelled that and ... I became more realistic."

Older, more experienced coaches appear to know their limitations and have attempted to reduce their commitment to coaching over the years until they have reached a compromising balance. In the past, teacher coaches could reduce their commitment to the number of teams they had to coach, as there were always younger teachers moving into the system who were eager to fill these vacant coaching positions. However, teacher coaches today are finding themselves in situations where they cannot reduce or even take a break from coaching because there are few young "relief" coaches entering the school system. They are faced with continuing to coach for an extended period and thus are caught in an environment which makes them more susceptible to burnout.

In addition to certain biographic characteristics, a number of school-related factors were examined in order to determine whether they influenced burnout. One of the factors which was examined was the size of the schools in which the teacher coaches worked. It was found that 43.7% of respondents who taught and coached in a school of under 1000 pupils fell into phases VII and VIII of burnout, whereas the corresponding percentage of teacher coaches in these phases in schools with over 1000 pupils was 22%. From these figures it would appear that teacher coaches from smaller schools reported higher degrees of burnout. It is feasible to suggest that because there are fewer staff members teaching in smaller schools, the staffing of interschool sports programs is made more difficult. Therefore, if smaller schools attempt to offer the same number of competitive teams as larger schools, the teacher coaches will be in an overload situation which can lead to burnout.

Another school-related factor which was seen to contribute to burnout was a lack of support by the school administrators for the interscholastic athletic programs. Among the coaches interviewed, those in Phase VIII of burnout reported lack of school-related support more frequently than coaches who were in Phases I and IV. These findings correspond to those reported in the literature which indicate that in organizations where support is provided, lower levels of staff burnout tend to be found (cf. Cherniss, 1980; Ellenburg, 1981; Maslach, 1982). They also support the findings of Ratsoy, Sarros, and Aidoo-Taylor (1986, p. 275) who, in their study of district based administrators, principals and assistant principals, and nonadministrative school based personnel reported "unsatisfactory relationships with superordinates" as a factor which caused stress in these individuals. Administrative support, or lack of it, was seen by the teacher coaches as being manifest in the school policies related to interschool athletics. Specifically, the lack of clear school policies regarding the role of interschool athletics was far more frequently reported by individuals in Phase VIII of burnout than by those in Phases I or IV. The lack of clear policy was seen to lead to role ambiguity as teacher coaches were unsure of the importance they should give to interschool athletics vis-à-vis their classroom responsibilities. Both Farber (1983) and Cherniss (1980) have reported that this role ambiguity can lead to high levels of burnout. More recently, Ratsoy, Sarros, and Aidoo-Taylor (1986, p. 274) reported role ambiguity to be a factor causing stress in both administrative and nonadministrative school based personnel.

Other forms of school-related nonsupport seen as contributing to burnout were the lack of compensation for coaching, the lack of recognition, and the lack of an equitable reward system. Of the teacher coaches in the upper phases of burnout (V to VIII), 62.5% did not receive any compensation for coaching. However, very few wished to see coaches paid for their services. It was the general feeling that there were other means of compensation which were more appropriate, the most frequently cited being time off from regular teaching duties. Coaches at all phases of burnout indicated that inequitable reward and recognition systems placed stress on them. Many suggested that teacher coaches who were involved in extracurricular activities should be given special consideration in the delegation of other out-of-classroom duties.

Conclusion

This study was concerned with investigating the degree of burnout in secondary school teacher coaches and identifying factors which may contribute to this burnout. It was found that teacher coaches experienced low to moderate ranges of burnout when compared to Maslach's normative distribution scores. Teacher coaches reported

a moderate amount of Depersonalization and Emotional Exhaustion but a greater sense of Personal Accomplishment than Maslach and Jackson's (1981b) population. This was attributed to the positive relationship between the teacher coaches and their athletes and the direct feedback on job performance provided by the coaching situation.

When the results from the teacher coaches were categorized according to Golembiewski's Phase Model, it was found that teacher coaches generally experienced less feelings of Depersonalization and greater feelings of Personal Accomplishment, thus contributing to lower burnout scores than Golembiewski's (1983b) sample. Teacher coaches did, however, score higher on Emotional Exhaustion. Nevertheless, although teacher coaches generally experienced less burnout than Maslach's and Golembiewski's samples, over 53% fell into the higher levels of burnout.

The findings of this study do support Golembiewski's phase model approach to burnout as a useful instrument for helping to determine the precursors of burnout as experienced by a particular occupational group. In the sample of teacher coaches studied in this research, a number of factors were shown to be associated with the upper levels of burnout. Although further research is needed before causality could be established, the present research does help identify variables which are a potentially useful starting point for work of this nature.

Although the results of this study support the usefulness of Golembiewski's phases model as helping to determine precursors of burnout, they show less support for the prepotencies of the subscales as proposed in his model. These prepotencies are based on the fact that increased feelings of Depersonalization are seen as leading to decreased feelings of Personal Accomplishment which in turn result in increased Emotional Exhaustion. Based on this progression, it is difficult to explain the mean subscale scores reported in this study as compared to those established by Golembiewski. With the lower scores on Depersonalization and Personal Accomplishment, one would expect this sample to have also reported a lower mean score than Golembiewski's sample on the Emotional Exhaustion subscale. It is the teacher coaches' higher score on Emotional Exhaustion which does not support Golembiewski's prepotencies of the three subscales. There are a number of possible explanations for this phenomenon. These include the potential of a Social Desirability Affect and the fact that other work-related sources may contribute more to teacher-coach burnout than coaching itself. These possibilities require further study.

In addition to the above comments on Golembiewski's phase model, there are two other points emanating from this study that relate to the model and are worthy of note. The first point is methodological in nature and relates to the reversing of the scoring system for the items in the Personal Accomplishment subscale. Although this procedure is necessary in order to be able to properly establish the phase model, it is somewhat confusing, particularly when trying to compare results with Maslach's norms which have been scored in the opposite manner. The second point worthy of mention relates to the dichotomizing of the MBI subscale scores to rank individuals as either high or low. This convention may not be sufficiently discriminating, and as Golembiewski, Munzenrider, and Carter (1983, p. 480) note, until norms for burnout phases are developed, this convention should be considered as convenient rather than definitive. The sequencing of the low and high scores into the eight phases of burnout (see Table 1) also raises some questions. This sequencing emanates from the prepotencies of the subscales based on the questions raised in this study about these prepotencies; the high/low sequencing in each of the phases is worthy of additional study.

Notwithstanding these points, the Golembiewski phase model does, as mentioned above, represent an extremely useful tool for identifying factors relating to higher levels of burnout. In this study, the gender of the individual, their age, the size of the school in which they coached and taught, the amount of school administration support for coaching, and the compensation, recognition, and rewards for coaching were all shown to be linked to the higher levels of burnout.

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The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 275-282*

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Information Integration Theory Extended: Cognitive Coding in Young Children

A set of tests for simultaneous and successive coding was constructed and administered to a sample of young children (Grades Kindergarten-2). The objectives of the study were to examine the consistency of the coding factors and to provide tests which would be sensitive to children's development. The tests were constructed to reflect a range of input and output demands including both sensory and behavioral components. Results of the factor analysis clearly validated the two coding factors and a factor of response speed. A MANOVA was then performed to determine which increments in test performance could be attributed to age differences. The results are discussed in terms of the potential of these tasks to identify cognitive processing problems in young children.

Efforts to move away from traditional psychometric approaches when examining cognition have relevance with young children, particularly when one is attempting to predict later academic progress. The expedience of attending to cognitive functioning, and potential problems in the latter, when children are at preschool or beginning school ages has been discussed by Latorne (1985). Neurologically, the child at this age may be conceived of as more "plastic," with a better prognosis for central nervous system adjustments (Satz, Friel, & Rudegeair, 1976). Psychologically, the younger child will be less likely to have suffered a loss of self-esteem due to failure academically (Green, Lyles, & Eissfeldt, 1980), and financially a child needing assistance may receive it prior to a need for more intensive and expensive attention (James, 1982).

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Greenfield and Scott (1985) have outlined a critique of current screening devices for preschool children, indicating that the former have typically been based on intelligence test content, and that such tasks reflect a general problem solving ability that is not likely to identify children with specific cognitive processing deficits. In the opinion of these authors, "Unless a preschool screening test assesses active cognitive processing, children who have deficits in particular cognitive areas will not be identified" (p. 44). Greenfield and Scott propose the alternative of "game-like cognitive tasks."

Cognitive deficits must be defined within the context of a theory of cognitive or intellectual functions. Even when the theory is not explicitly mentioned, it is implicit in any system of classification. When we classify abilities or disabilities, we operate from certain theoretical assumptions about cognitive abilities. Therefore, screening tests for cognitive processing should be chosen or constructed in accordance with a theory.

Information integration theory provides such a process-based approach to cognition (Das, Kirby, & Jarman, 1975; 1979). Based on the work of Soviet psychologist Luria, the proposition is put forward that the brain employs two mutually dependent ways of coding information and that these, along with an organizational "planning" component, underlie all forms of cognitive processing. Simultaneous coding involves the synthesis of various separate elements into groups, with spatial overtones such that all parts of the group are accessible regardless of their position in the group. Simultaneous processing is occurring when we glance at a painting and survey it as a whole, integrating all of the spatial relationships, or when we listen to an orchestra and all of the rhythms, pitches, and tones are integrated into a holistic music scheme or unit. Such a synthesis of relationships is necessary for more academically complex related tasks such as the comprehension of numerical and geometrical concepts, the understanding of the grammatical system of a language, and the comprehension of written prose.

Successive synthesis involves the integration of separate elements into series or groups that are related temporally rather than spatially. Luria described such elements as being integrated in a chain, with each link activating the next link in a continuous but serial pattern. Successive coding is reflected in activities such as decoding print, producing a series of written letters, memorizing a list of times, and producing or interpreting narrative speech.

Planning ability appears to be somewhat superordinate to the coding functions, and involves the generation and execution of programs, and the use of foresight and flexibility. This is apparent, for example, when a child demonstrates strategic intent within a task, such as the planning and organization of a written composition.

Obviously the coding and planning functions are implicated in most academic learning and classroom activities. Each child is viewed as having the simultaneous and successive coding processes and planning strategies available for use in learning to a greater or lesser degree, depending on the individual's own processing abilities and preferences, and also on the particular task demands.

Over the past two decades, Das and his colleagues have been involved in successful efforts to operationalize the concepts of simultaneous and successive coding and planning, and validate respective marker tasks across samples divergent in age, IQ, learning ability, and cultural background (where "marker task" implies those which are differentiated clearly and in line with theoretical predictions for the two types of coding and planning within a factorial analysis, Das, 1972; 1973; 1985; Das & Molloy, 1975; Snart & Swann, 1981).

One recent attempt to incorporate the essence of information processing theory into a practical assessment battery for children has been the K-ABC (*Kaufman Assessment Battery for Children*, 1983). The K-ABC includes sets of subtests to measure simultaneous processing, successive processing, and achievement or school related skills. Drs. Kaufman were both involved with the development of the McCarthy Scales and the WISC-R, and acknowledge the centrality of information integration to the development of the K-ABC: "Factor analysis and coefficients of correlation with Das, Kirby & Jarman's (1975; 1979) battery of successive and simultaneous tests offer strong support for the construct validity of the processing dichotomy underlying the K-ABC Mental Processing Scales" (Kaufman & Kaufman, 1983, p. 3). Thus the intent of the K-ABC was indeed to move away from a post hoc analysis of mainly quantitative analyses of children's performance and to incorporate a dimension of ongoing processing capabilities.

Since it is a recent addition to the domain of assessment, it is natural that the K-ABC undergo a critical analysis in the literature. Though it has been described positively as "perhaps the first standardized battery of intelligence tests that attempts to measure processes" (Das, 1984c, p. 229), there is also a caution on the same page that the Kaufmans have "initiated but not completed the job of constructing a process-based test of cognitive competence." More details of the latter suggestion are provided elsewhere (Das, 1984c; 1984d). The K-ABC apparently has something to offer, particularly in the sense of increasing our breadth of understanding of children's achievement or underachievement in school. For children at beginning school ages, the issue appears somewhat equivocal, and increased documentation of the potential for information integration theory and assessments to be "predictive" of school performance is necessary. Development of tasks for young children in addition to those of the K-ABC, though also administered and analyzed in terms of processing strategy rather than quantitative score per se, are therefore part of this continuing effort. Tasks similar to those used traditionally as ability measures, such as the xylophone and picture memory tasks of the McCarthy Scales, but administered and analyzed in this new light, are appropriate inclusions within such a battery.

It is apparent from research reported in the K-ABC Interpretive Manual and by Das (1984a) that the coding processes develop essentially in a hierarchical fashion, though continued exploration seems to indicate that successive processes may be utilized earlier than simultaneous ones. If it is possible to validate further marker tasks for simultaneous and successive coding on populations of young children, which is the main purpose within the present study, and follow a sample of students to determine the predictive value of the tasks, then the benefits obviously exceed even the knowledge of correlations between processing strengths and weaknesses and actual school performance later. Students' performance on the present tasks will comprise a set of baseline data from a group of young children prior to the identification of problems in achievement. A longer term follow-up will be possible relating to strengths and weaknesses in coding to academic performance.

The objectives of the present study therefore were:

1. To provide a further extension of the information integration approach to cognition to children as young as five years of age.
2. To develop a sample of appropriate and motivating marker tasks for simultaneous and successive coding for children ranging in age from five to about eight years.
3. To assess the consistency of factor analytic results with young children, with those established for older students and adults, and thus examine the validity of the marker tasks.

4. To provide some initial comments as to a relationship between chronological age and the development of simultaneous and successive coding.

Method

Subjects

Students participating in the present study were members of two classrooms at each of kindergarten ($N=43$), grade 1 ($N=43$) and grade 2 ($N=44$). The classrooms represented the total number of English speaking classes at each grade level in an Edmonton school which also offered French immersion as an alternative. Since the school population included students from a middle class neighborhood, as well as those who were bussed from lower socioeconomic neighborhoods, the range of students sampled was representative of the city's population of young school children.

Parent permission was sought prior to assessing the children, and in no case were we denied permission. Thus we were able to access all students in the six identified classrooms. Testing was carried out in a quiet room at the school and the order of test administration was counterbalanced across students. Each child was seen by one of the authors (Barriault). She was able to develop excellent rapport with the young children, who were seen individually for testing. The average time per assessment was 35 minutes. The researcher was in the school over the course of six weeks to complete testing.

Coding Tasks

An attempt was made to create tasks that would be appealing to children in the early grades, tap a range of sensory and behavioral areas in terms of input and output demands, and reflect a coding dimension in either the simultaneous or successive domain. It is noteworthy that care was taken during task development to avoid an alignment of specific cognitive demands with potential marker tasks for either simultaneous or successive coding. For example, we included tasks requiring memory ability, visual-motor responses, and nonverbal responses in both sets of marker tests. Input for specific tasks in each section involved both vision and audition. Thus a potential confounding variable for the interpretation of results was significantly reduced. Three tasks were developed as potential marker tasks for successive coding, based on previously known marker tasks for older children, (Brailsford, Snart, & Das, 1984) and three were developed for simultaneous coding.

The following tasks were predicted to be successive marker tasks:

1. *Imitation of Rhythm (Xylophone).* The child is required to reproduce a series of progressively more difficult sequences on the xylophone. Series range in length from three to seven notes, and the final score consists of the total number of correct taps. This task provides auditory, visual, kinesthetic, and tactile input, and requires visual-motor and auditory-motor output.
2. *Moveable Sequences.* The child is required to reproduce various series of pictures by sliding cards through a frame apparatus until they match the researcher's model. Input here is visual and output is visual-motor.
3. *Identification from Memory.* This task involves presentation of a number of series of familiar pictures to the child which are then covered, with only the bottom of each picture frame remaining in view. In each case the child is then asked to identify certain cards by pointing. There are 10 trials, involving series from three to eight pictures in length, and the score consists of the number of pictures correctly recalled. Input is visual and output is visual-motor.

The following tasks were predicted to be marker tasks for simultaneous coding:

1. *Memory for Design (Turtles).* Similar to the adult version of this task, the child is required to draw from memory a series of six simple line drawings. To heighten motivation the designs are presented and reproduced on the blank shell of a drawing of a turtle. Scoring guidelines are patterned after those used with adults, such that for the seven items, each could receive a score of 0, 1, 2, or 3 according to the maintenance of correct proportions and relationships, rather than exactitude of detailed replication. This is particularly important because even with these simple drawings one would not want the emphasis on visual-motor coordination per se. Input is visual and output is visual-motor.
2. *Silhouette Match.* The child is required to match 10 concrete silhouettes with their partially outlined counterparts in a gameboard format. The child is timed as to the appropriate sorting of the cards following a trial item. Scoring also consists of the number sorted correctly. Input is visual and output is visual-motor.
3. *Reveal a Section Puzzles.* The child guesses the content of a series of pictures as he or she is presented with puzzle pieces of each picture in a cumulative manner. Input is visual and output is verbal.

Results

Results on the coding tasks for the total number of students ($N=130$) were submitted to a principal components analysis followed by Varimax rotation, with eigenvalues greater than one used as the criterion for rotation (see Table 1). Such rotation resulted in the emergence of three factors representing simultaneous coding, successive coding, and response speed. These three factors have been outlined in earlier studies (Das, Kirby, & Jarman, 1975), but the tests used were different; thus the factors seem to have generality across different test batteries.

To examine the homogeneity of the correlations for the coding tasks at kindergarten, grade 1 and grade 2, these three correlation matrices were compared using the asymptotic chi-square test of equality (Jennrich, 1970). This test indicated no differences between the matrices across the three groups.

A multivariate analysis of variance procedure (Morrison, 1967; Finn, 1974) was used to examine the marker task scores for simultaneous and successive processing across the three age groups. The speed scores were not included because these are not central to the information integration theory. A Wilks Lambda Criterion indicated significant differences between the groups ($F=8.94$, $df=12/244$, $p<0.001$). A follow-up was performed on the individual pairs of means using simultaneous confidence intervals, and the results are summarized in Table 2.

The latter results are reported in order to establish the sensitivity of each test to developmental differences. Since the adjacent groups of children were very close in age, most of the comparisons did not show significant differences between K and Grade 1, and between Grades 1 and 2, even though there was a significant developmental trend as evidenced from the MANOVA results. The four simultaneous tests, now including the Xylophone task, were examined first. Memory for Designs (Turtles) was the "best" test: All adjacent groups differed significantly. Xylophone scores showed significant developmental increments from Grades 1 to 2, but not from K to Grade 1. In Silhouette Matching, scores increased significantly from K to Grade 2. Reveal a Section was the most disappointing; none of the group differences was significant. Among the successive tasks, Moveable Sequences scores were significantly greater for Grade 2 than for K; no other differences were significant. ID memory scores did not show significant increments.

TABLE 1

Orthogonal (Varimax) Rotations of
Three Factors Following Principal Component Analysis*
($N = 130$)

Variable	Mean	SD	Orthogonal Factors			h^2
			Simultaneous	Successive	Speed	
Xylophone	30.68	5.15	791	081	016	632
Moveable Sequences	20.02	3.39	277	747	104	646
Identify from Memory	9.24	2.32	033	844	−171	743
ID from Memory (time)	42.72	17.14	166	−067	732	568
Silhouette Match	4.89	2.02	656	−258	301	588
Silhouette Match (time)	142.14	64.55	−090	−001	805	655
Reveal a Section	10.67	1.72	676	027	−138	477
Memory for Designs (Turtles)	7.80	4.09	816	173	127	713
% Total variance			45.68	27.45	26.87	

*decimals omitted from factor loadings

TABLE 2

Summary of the Multiple Comparisons for Task Means

	Total Possible Score	GROUP		
		Kindergarten (N=45)	Grade 1 (N=44)	Grade 2 (N=46)
Moveable Sequences	27	18.44	20.00	21.59
Identification From Memory	18	8.56	9.56	9.59
Silhouette Match	8	4.05	4.81	5.79
Reveal a Section	16	9.91	10.81	11.27
Memory for Designs (Turtles)	18	4.61	7.65	11.07
Xylophone Task	43	27.19	30.37	34.38

Note: A line under two or more means for a given task indicates that those means do *not* differ at the .05 level; that is, the confidence interval for such a pair of means contains zero.

Discussion

The factor patterns which emerged following the overall factor analysis were in line with the authors' expectations and past research with older children and adults (Das, 1984a, 1984b). The only task that had not been correctly predicted was the Xylophone marker task for successive coding, which actually loaded with the simultaneous tasks within the factor matrix. The latter finding may be understood and justified on a post hoc basis, with further attention to the actual task demands. When children were asked to replicate sequences on the Xylophone, we assumed that the cognitive coding in order to respond would necessarily involve successive processes. However, it appears that in many of the earlier items children could also have responded on the basis of the total visual pattern of the sequence or grouped them in simultaneous chunks (e.g., every second bar on the xylophone). This holistic response would have altered the task demands cognitively such that they would fall into the domain of simultaneous coding. As introduced earlier in the paper, the coding strategies accessed for each task are influenced not only by the child's available and preferred strategies, but also by the task design and demands.

Apart from the Xylophone task, there is clearly support for the validity of the marker tasks for young children as they are capable of reflecting successive and simultaneous coding. Alterations in difficulty levels for some of the tasks and slightly more sophisticated scoring criteria will be developed as research with these tasks proceeds to construct a viable screening battery. However, even in the present form, it is evident that the marker tasks are motivating, age-appropriate, and worthy vehicles to provide a further extension to information integration theory.

The mean scores presented in Table 2 indicate a predictable improvement in the actual performance on all the coding tasks as children developed chronologically. Since there were no difficulties with either floor or ceiling effects for any of the tasks, it appears that the task demands represented a reasonable range of difficulty for children at these ages. What remains to be examined with particular interest is the relative strength and growth of each type of cognitive coding in students who are particularly successful, or unsuccessful, academically.

With the data available to this point, it is reasonable to speculate that the information integration approach indeed has potential for use with young children. It can be used to provide an early screening device in school, and consequent to screening, the model can lead to remedial measures to help prevent academic underachievement. Cognitive deficit in either simultaneous or successive processing can be open to remediation. Appropriate remedial programs based on the model have been successful in improving reading (cf. Brailsford, Snart, & Das, 1984) in older children. Comparable programs for kindergarten children have the potential to help prevent development of reading and arithmetic disabilities.

Notes

1. This research was supported by a grant from the Central Research Fund, University of Alberta.

2. More detailed information about the assessment tasks may be obtained from the authors, c/o Developmental Disabilities Centre, 6-123D Education North, University of Alberta, Edmonton, Alberta, T6G 2G5.

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The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 283-291*

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and

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A Canadian Assessment of Consumer Education Knowledge of Prospective Teachers

This study examined the factors affecting the knowledge of prospective teachers in consumer studies, as measured by a test of consumer knowledge. The data were collected from 187 prospective teachers in their final year of study at both Brandon University and the University of Manitoba. chi-square analysis revealed that prospective teachers who were older, had more experience in consumer matters, had taken consumer related coursework, and who felt competent to teach in this area scored significantly higher on the test of consumer knowledge than comparative groups.

As society in general and the marketplace in particular have become more complex, the need for consumers to be well informed has increased dramatically. The public school system has been considered an appropriate arena for transmission of this information in the form of consumer education courses. Administrators have acknowledged the significance of consumer education as a subject that provides the seeds for teaching students the life skills they require to live and function successfully in our complex society. The result has been that the status of consumer education has risen to a level that warranted its integration into the school system curriculum. But are the teachers knowledgeable in this subject matter area?

The term *consumer education* has been defined by many authors. Dalaba (1978) defined consumer education as "the development of the individual in skills, concept, and understandings required for everyday life to achieve, within the framework of his own values, maximum utilization of and satisfaction from his resources" (Brown, 1983, p. 205). Willett (1979) stated that "Consumer education is an area of study

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which equips individuals and groups with the knowledge and skills to make effective choices and take action regarding the use and conservation of available resources in the public and private sectors consistent with individual values and societal needs" (Bannister & Monsma, 1979, p. 6). In a Manitoba Department of Education publication, consumer education is defined as "the process of developing skills and understandings in the considered use of personal and environmental resources to responsibly meet human needs and wants" (1977, p. 1). Essentially, each definition states the same three elements with which consumer education should equip pupils: (a) knowledge, (b) values, and (c) skills in the face of making consumer decisions.

There are several major factors which have influenced the effectiveness of consumer education programs in the schools. One of these is that consumer education as a subject area has not been in existence long enough for all the problems to be identified and clarified. Considering the way consumer education is defined, one recognizes that it potentially captures a wide range of areas and problems associated with everyday living such as decision-making related to personal money management, energy conservation, food buying, advertising, consumer laws, and numerous other areas. In light of the magnitude of consumer studies, consumer educators face an arduous task of teaching effectively in this particular subject area. Secondly, most educators have had very little, if any, training or preparation for teaching consumer education related subjects. There is considerable reluctance among educators to participate in teaching consumer education, possibly because the educators are ill-prepared in the first place. In Manitoba's case, for instance, the curriculum coordinator in the Department of Education stated that teachers designated to teach consumer education feel ineffective and incapable of teaching these courses (Parasiuk, personal communication, 1983).

Using Bloom's *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain* (1956), it becomes possible to understand what may be the cause for teachers' feelings of ineffectiveness and incapability to teach consumer education. Bloom identifies a hierarchy of learning that takes place in the cognitive domain. The elements in this hierarchy are knowledge, comprehension, application, analysis, synthesis, and evaluation such that a learner begins with low level memory skills identified as knowledge, and ends up with high level skills involving evaluation (Popham, 1981). Teaching involves a complex process whereby teachers need first to learn how to adopt skills, attitudes, and cultivate the knowledge needed to teach students effectively.

This study is concerned with examining whether prospective teachers in Manitoba have some level of knowledge (which is the first level of Bloom's cognitive domain) in consumer studies using a minimum competency or achievement test (Ebel, 1980). Bloom's definition of knowledge has been adopted for this study as that which "involves the recall of specifics or universals, the recall of methods and processes, or the recall of a pattern, structure, or setting" (Popham, 1981, p. 329).

Relevant Literature

A search of the literature revealed that research in consumer education has concentrated predominantly on high school students. Researchers have probed consumer education students with tests and follow-up studies in their quest for determining the amount of knowledge students have in consumer matters (Langrehr, 1979; Mayer, 1981). On the other hand, apparently little emphasis has been given to the examination of the knowledge and skills of teachers who are designated to teach consumer courses. Davis (1978) and Garman (1979) both conducted an autumn 1977 Education

Resources Information Centre (ERIC) search which revealed that there were no studies specifically dealing with teacher preparation for consumer education. Garman found few comprehensive studies attempting to determine the knowledge level of educators teaching consumer education. For the purpose of this study, an ERIC search was conducted in 1983 and in 1984, and only six studies were found examining the competency of consumer education teachers. It seems reasonable to assess teachers' consumer education knowledge as well as considering the assessment of the consumer knowledge of students. In the words of Davis, "it is highly probable that if teachers are better prepared and competent for teaching consumer education, students will become more competent consumers" (Davis, 1978, p. 191).

Uhl (1970) found that teachers were not sufficiently equipped to teach consumer education and there was a need for qualified teachers in consumer education. Davis (1978) found that there was a statistically significant difference between those teachers who had no courses in consumer education or related subjects and those who had some preparation in these areas. The teachers with some preparation were better equipped to teach consumer education. Garman (1979), too, discovered in his survey of 4,309 subjects that prospective teachers who finished at least one consumer education course scored higher on an achievement test than those without any consumer related courses. Carsky, Lytton, and McLaughlin (1984), in their study involving 182 university undergraduates enrolled in a consumer education class, found that postsecondary consumer education courses can lead to positive changes in consumer competency of these students. Langrehr (1979) also found significant differences in consumer knowledge between students enrolled in consumer education classes and those in other classes.

Garman (1979) observed that major and minor areas of study and gender affected performance on the general test of consumer knowledge. Participants with majors in social studies, science, and home economics (human ecology) scored higher on the test, and participants with minors in home economics and business scored higher than those with other minors. Garman also discerned that gender was a possible factor influencing consumer knowledge. In his study, males had significantly higher scores on the consumer test than did females.

Besides finding that consumer related courses helped equip teachers to teach consumer education, Davis (1978) also noted a statistically significant difference between teachers who felt competent and those who did not feel competent to teach consumer education. Those teachers who had credit courses in consumer studies, workshops, or both, did feel more effective and competent to teach. Her findings were that 58.2% of 600 teachers in Kentucky felt competent to teach, and 32.7% of teachers teaching consumer education did not feel competent to teach. As well, 46.4% did not have any training in consumer education, and 48.1% did not feel their teacher preparation was sufficient. Apparently, according to Davis, if a teacher feels competent the teacher is likely to feel prepared to teach.

Research in the area of teacher preparation in consumer education has dealt little with an examination of factors, other than coursework and feelings of competence, which are helpful in preparing and indicating the willingness of teachers to teach consumer education. No research has been found that attempts to examine other factors such as age, marital status, and consumer management experiences that may have influenced the preparation of teachers.

Research Design

Sample

The sample was composed of 159 participants from the University of Manitoba and 28 from Brandon University making a total sample size of 187. It was composed of 96 males (53%) and 91 females (47%) with the majority of prospective teachers being in their early 20s. Respondents between the ages of 20-24 made up 62% of the total sample, and those 25 years and over made up the remaining 38%. The majority of the participants (67%) were single. All were prospective secondary school teachers in their final year of study and had the following majors or teaching electives: business, human ecology, mathematics, science, and social studies. The data were collected in September 1984.

Instruments

An achievement test entitled the Test of Consumer Knowledge (TCK) was administered which consisted of 48 multiple choice items. This was modified by the researchers from tests developed by Stanley (1975) and Dlabay (1984) to ensure suitability in Canada and was pretested with a similar group of senior students during the spring of 1984. The test items were compared for construct validity with curriculum guidelines. The TCK was checked for internal consistency and reliability using the Kuder-Richardson formula number 20, and the reliability coefficient was found to be 0.997. Stanley's (1975) Form "A" and Form "B" test had an alternate form reliability coefficient of 0.733 and 0.738 respectively (Garman, 1977). Respondents also completed a questionnaire designed to:

1. Determine the number of consumer related courses that have been taken by each participant.
2. Measure some particular life experiences of prospective teachers which include childrearing experiences and consumer management experiences (Dlabay, 1984; Gordon & Lee, 1972; Jelley & Herrmann, 1973) that may affect performance on the Test of Consumer Knowledge (TCK).
3. Measure the feelings of confidence/competence of prospective teachers for teaching consumer education courses.
4. Obtain demographic information regarding age, sex, and marital status.

Data Analysis

For descriptive purposes a series of cross-tabulative analyses were made using categorized data. The dependent variable, score on the TCK, was examined using the chi-square statistic, and in some cases gamma was used to test for any relationships with the independent variables (Goodman & Kruskal, 1979; Mendenhall, 1979). The significance level for chi-square was set at $p = .05$ for testing the hypothesis in this study.

Results and Discussion

The test scores on the 48-item test called Test of Consumer Knowledge were converted to percentiles. In general terms, the test results can be subdivided into three groups of achievers: low achievers, moderate achievers, and high achievers. In the low achievers category, 56 (30%) of participants scored between 35.4% and 69.99%. In the moderate achievers category, 70 (37%) scored between 70.77% and 79.99%. Finally, in the high achievers category, 61 (33%) scored between 80.00% and 91.7%. In the chi-square analyses of hypothesis, test score was grouped into low, moderate, and high achievers throughout the study. Of the 187 completed tests, the mean achievement raw score on the 48-item test was 35.7 or 74.3% with a standard deviation of 4.63.

TABLE 1

Chi-square Analysis for Independent Variables and Test Score

Variable	Test Score (Percent) Low ($n=56$) ≤69.99	Moderate ($n=70$) 70.00-79.99	High ($n=61$) ≥80.00	Total number	Total percent
Sex $n=187$					
Male	27	40	33	96	(100)
Female	33	34	33	91	(100)
$x^2=1.083, df=2, p=0.5817$					
Age $n=185$					
(20-22)	43	37	20	68	(100)
(23-27)	25	40	35	81	(100)
(28-51)	17	33	50	36	(100)
$x^2=13.362, df=4, p=0.0096^{**}$					
Consumer related courses $n=187$					
None	34	38	28	144	(100)
1 or More	16	35	49	43	(100)
$x^2=8.082, df=2, p=0.0176^{*}$					
Consumer management experiences $n=187$					
Low	51	30	19	81	(100)
Moderate	17	46	37	71	(100)
High	9	37	54	35	(100)
$x^2=33.298, df=4, p=0.0001^{***}$					
Marital status $n=187$					
Single	35	33	32	125	(100)
Married and/or previously married	19	47	34	62	(100)
$x^2=5.681, df=2, p=0.0584$					
Childrearing experiences $n=187$					
None	30	37	33	160	(100)
1 or More Children	30	37	33	27	(100)
$x^2=0.007, df=2, p=0.9964$					
Confidence/ competence $n=187$					
Low	47	34	19	62	(100)
Moderate	24	39	37	76	(100)
High	18	39	43	49	(100)
$x^2=14.704, df=4, p=0.0054^{**}$					
Willingness to teach $n=186$					
Yes	25	36	39	137	(100)
No	45	39	16	49	(100)
$x^2=10.386, df=2, p=0.0056^{**}$					

$p<0.001^{***}$
$p<0.01^{**}$
$p<0.05^{*}$

As may be seen in Table 1, sex was not significantly related to test score. These results do not support the findings of Garman (1977) who, in his earlier national study, found that males scored significantly better on the achievement test than did females. This may be due to an increased participation of women in the labor force and more involvement of women in major financial decision-making. Age, as expected, was shown to have a definite impact on TCK performance. Those prospective teachers aged 28 years and over performed significantly better on the test than did the other prospective teachers. Respondents were asked to indicate if they had completed any consumer related courses. They were asked to identify the title or course number of any consumer related courses that they had taken at university. Of the 187 prospective teachers, 144 had not completed any consumer related courses whereas 43 had completed from one to seven.

To test the hypothesis that those prospective teachers with consumer related courses would score higher on the TCK than those without consumer related courses, the chi-square statistic was used. The variable "consumer related courses" had to be grouped as those without courses and those with one course or more to avoid difficulties with the cell size using chi-square analysis (Erickson & Nosanchuk, 1977). The test score was grouped according to the low, moderate, and high achievers categories. As was hypothesized, consumer related courses were significantly correlated to test score. Therefore, those subjects who had taken consumer related courses were more likely to achieve higher scores on the TCK than those without these courses.

TABLE 2

Differences in Mean Test Scores
of Prospective Teachers as Related to
Consumer Management Experiences

No. of Consumer Management Experiences	Mean % Score on TCK	Standard Deviation	Frequency $n=187$	Percent (100%)
low 0-15	69.86	10.53	81	43
moderate 16-30	76.70	7.61	71	38
high 31-65	80.30	6.1	35	19

gamma=0.518, $df=4$

Consumer management experiences such as buying a home, obtaining life insurance, or filing income tax were found to be very significantly correlated with TCK score. Of those with low scores on the TCK, 51% had few consumer management experiences (0-15) while 9% had high numbers of experiences (31-65). The mean test score for the low experience group was 70, for the moderate group 77, and for the high group 80.

The hypothesis that previous experience in consumer matters is a better predictor of score on the TCK than the number of consumer related courses taken was strongly supported. Using the gamma statistic, the significance level of consumer related courses to test score was 0.395, whereas the significance of consumer management experiences to test score was 0.518. It is apparent that consumer management exper-

iences are more strongly related to score on the TCK than consumer related courses; consequently, it is a better predictor of test score.

Confidence/competence of prospective teachers to teach consumer education was found to be significantly related to test score. Results found that a higher level of confidence was significantly related to a higher test score. Those who indicated they had a high level of confidence scored significantly higher on the Test of Consumer Knowledge than did those who indicated they had a lower level of confidence. This finding supports similar findings by Davis (1978). In Davis' study, teachers who felt competent or confident to teach consumer education felt better prepared to teach consumer education. This study sought to determine whether those prospective teachers that indicated they had a high level of confidence/competence also had more knowledge in consumer studies and would display a greater willingness to teach consumer education. The finding did show that this relationship was significant.

It was hypothesized that human ecology majors would score higher on the TCK than students majoring in business, mathematics, science, and social studies. The hypothesis was based on the fact that there are a larger proportion of consumer courses in human ecology than in any other faculty (University of Manitoba, *Calendar*, 1983-1984); consequently, human ecology students would have greater access and opportunity to take consumer related courses. The findings of the study showed that human ecology students did score the highest on the TCK, (77.92%), slightly above science majors (77.78%).

Garman (1977) found that the highest scoring majors on the Test of Consumer Competencies were the following in descending order: social studies with a mean percent score of (63.96), science (63.80) and home economics (63.60). A one-way analysis of variance revealed significant differences among the majors.

In this study, neither marital status of the respondents nor their childrearing experiences were found to have any relationship with score on the Test of Consumer Knowledge. Both variables had collinearity problems with each other and with the variables of age and consumer management experiences, which may account for the lack of significant findings.

Implications and Conclusion

It is apparent from the study that consumer knowledge was influenced by age, consumer management experiences, feelings of confidence/competence, and number of consumer related courses taken by prospective teachers. Only 33% of the sample were classified as scoring high on the achievement test, and a major portion of these high scorers were made up of those that were older, had more consumer management experiences, had a high degree of confidence/competence, and had taken consumer related courses. The findings of this study reinforced the idea that knowledge about consumer matters is not only attainable from the classroom, but is also gained from life experiences. School administrators would benefit if they kept these factors in mind when they select teachers to teach consumer education. Also, based on the finding that consumer related courses were significantly related to consumer knowledge, it may be beneficial for school systems to provide training or workshops for teachers who would be teaching consumer education.

Concurrently, the findings of the study suggest that school administrators should not select consumer education teachers based on gender, marital status, or childrearing experiences as might be intuitively expected. It was found that these variables had no bearing on the level of consumer knowledge of prospective teachers. This study did not find that one sex had more consumer knowledge than the other,

that married and/or previously married subjects scored higher on the Test of Consumer Knowledge than single subjects, or that those with the experience of raising children had more consumer knowledge than those without children.

Prospective teachers also need to apply the consumer education knowledge they possess in the classroom. Further research may attempt to assess the application of this knowledge by prospective teachers, to allow for more effective teacher preparation.

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The Alberta Journal of Educational Research *Vol. XXXIII, No. 4, December 1987, 292-306*

PERSPECTIVES

Government Sponsored Private School Studies in Alberta and Ontario

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In Alberta one study partially concerning private schools was completed by a committee appointed by the Minister of Education, and a related major study was carried out under tendered contract. The Ontario private schools study was conducted under the direction of a commissioner appointed by Order in Council. Contextual differences related to provincial constitutions and practice are reflected in the approaches taken in the studies. It is suggested that the continuing academic and research value of the Ontario study exceeds that of the Alberta studies, and that such is the consequence of government policies regarding the assignment of each study. The practicality of implementing the recommendations of a study is contingent on the degree to which these reflect the reality of economic, social, and political forces which sway the decisions of a government.

The purpose of this paper is to compare the commissioning of private school studies in Alberta and Ontario, the manner in which the studies were conducted, the findings and recommendations arising from the studies, and the usefulness of the study reports for further research and for policy making.

Context

Nearly all early education efforts and the establishment of the first schools in Canada can be credited to churches and religious societies. Early settlers arrived on this continent even before free public education had become institutionalized in their ancestral homelands. Phillips (1957) pointed out that private initiative frequently performed a public service before local education authorities were set up. As in eastern Canada, so in the west the early schools were established mainly by missionaries and churches.

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Stamp (1970) explained that "State enterprise in Canadian education grew from modest beginnings in the mid-nineteenth century to gigantic proportions in the post-World War II era" (p. 444).

According to Stamp (1985), the first private schools were "schools of necessity" which provided an education for the children of concerned parents before any state organized public school systems were in place. Some colonial governments provided some of the early voluntary schools with token grants in order to provide a measure of public assistance or to encourage such schools in the improvement of their instructional programs. Some of these early private schools became "schools of privilege" open to those who could afford the substantial fees.

Following the establishment of provincial school systems, other private schools which Stamp calls "schools of protest," came into being. Roman Catholic and Jewish private schools were organized because the public schools were found to be of Protestant and Christian hue. In more recent years an increasing number of private schools have been established by Protestant denominations which find the public schools to be too secular (Bergen, 1981b). The private schools of today, according to Stamp, might be called "schools of diversity," which reflect not only the religious and cultural pluralism of current society, but also the intent of groups to strengthen and maintain their cultural heritage, or the desire to have their children instructed in schools which espouse a particular pedagogical philosophy, such as the Waldorf and Montessori schools.

Ontario and Alberta: Comparisons and Contrasts

According to the Constitution Act of 1867, one of the provincial powers relates to education. Section 93 states that "In and for each Province the Legislature may exclusively make Laws in relation to Education." Formal school systems had developed in each of the colonies which became the first four provinces in 1867, and the denominational feature of public schooling in some of these was to be protected by the constitution. The Federal Cabinet and Parliament were assigned powers to protect rights and privileges held by Protestants and Roman Catholics with respect to schools in any of the Provinces. The right of minority groups to Catholic or Protestant schools was guaranteed for Ontario by virtue of section 93 of the Constitution Act of 1867 and for Alberta also by Section 17 of the Alberta Act of 1905.

Prior to confederation, a series of legislative acts, culminating with the Separate Schools Act of 1863, provided for the placing of Catholic separate schools on an equal basis with those of public "common" schools in Canada West. However, financial support was not granted beyond Grade 8 (later extended to include Grades 9 and 10) as the Common Schools Act of 1859 related only to the first eight grades. Tested in the courts of the land and appealed to the Privy Council (England), the latter ruled in 1928 that separate school supporters had no legal claim to financial support for any secondary schools (Foucher, 1985). In response to the support of Catholic voters at the polls and the submissions of the Catholic Taxpayers Association of Ontario and of the Catholic bishops in the 1930s, the Hepburn Government sponsored an Assessment Bill which would improve the lot of separate school supporters. The Bill was passed in 1936, but repealed the next year following strong opposition from public school sectors and from Protestant organizations and clergy (Walker, 1976). The issue came to a head again in the late 1960s, and when Education Minister William Davis became Premier in 1971 he announced that aid to Roman Catholic separate schools would not be extended (Stamp, 1982). However, the incessant lobbying for the extension of support for secondary separate schools in Ontario culminated in the announcement by

Premier Davis in 1984 that such funding would be introduced one grade each year until all grades would be covered (Shapiro, 1985). In a three-to-two decision the Court of Appeal of the Supreme Court of Ontario supported the constitutionality of Bill 30, introduced by the Government on July 4, 1985, providing for the extension of public funding to Roman Catholic secondary schools. An appeal to the Supreme Court of Canada contesting the decision was heard early in 1987. On June 25, 1987, the Supreme Court ruled that the government financing of Ontario's Roman Catholic high schools is constitutional.

Section 17 of the 1905 Alberta Act guaranteed financial support, equal to that available to public schools, for separate schools for all 12 grades, and such support has continued without interruption. Consequently, Catholics in Alberta found little need to establish private schools. In Ontario, Catholic secondary education was provided in private schools, most of which were operating in conjunction with the separate schools under school boards offering elementary schooling.

In Ontario, a notice of intention to operate a private school must be submitted annually on or before September 1st according to section 15 of the Education Act. This notice must include the school's affiliation, the levels of instruction, enrollment estimates, teaching staff estimates, and information about the premises. Subsequently a report must be submitted listing all staff members, their teaching subjects, and their experience. The Minister may direct the inspection of any private school. Generally, all private schools are inspected by inspectors of private schools working out of the regional offices of the Department which serves the geographical areas in which the schools are located. Following a visit to a school, the inspector submits a detailed report on the staff, the students, and the grades of instruction. The Ministry compiles a list of all operating private schools. If the inspection is for the purpose of certification of teachers or for the granting of high school diploma credits, the Ministry imposes a modest service fee. Currently, no direct government grants are available to private schools in Ontario. However, free curriculum guidelines are provided to the schools.

In Alberta, the operator of a private school must receive prior approval from the Minister of Education according to section 10 of the Department of Education Act. The Minister grants approval on the basis of three main criteria: the qualifications of the teaching staff, the adequacy of the program of instruction, and the suitability of the physical facilities. The Minister has the authority to cause the inspection of any school, whether public or private. As a matter of course, personnel from the provincial regional offices of education carry out such inspections in private schools, and pupils in such schools generally write any provincial tests which are administered in the public schools. Private schools are also permitted to call on the consultative resources of the regional offices at no cost.

As a consequence of active lobbying by Alberta private school supporters, token grants of $100 per pupil were introduced in 1967 (Digout, 1969). These were gradually increased until a level of 75% of the per pupil grants for public schools was attained. This grant support constitutes approximately one-third of the total revenue per pupil for public schools. Generally, if the teachers hold Alberta certification, a nonprofit private school is entitled to receive government grants. If teachers are not certificated, the school is not eligible for government funding. Judge Oliver's ruling on the Holdeman Mennonite private school case in 1978 supported parental choice in the schooling of children. The Minister's response was to revise private school regulations to provide for a category of private school which did not require certificated teachers (Bergen, 1981a).

In 1984, when Shapiro began his research on Ontario schools, about 535 private schools representing about a dozen religious affiliations and several secular associations enrolled approximately 87,100 students, of which about 40% were Catholic. During the same year, when Woods Gordon Management Consultants examined Alberta private schools, approximately 114 approved schools with an enrollment of about 11,400 full-time students were tabulated; very few of these were Catholic as Separate Catholic schools provide for instruction in all 12 grades.

Though some groups in Alberta have been able to conduct alternative schools under the general direction of public school boards, such as the Hebrew School in Edmonton, any such provisions are subject to the whims of the particular boards. For example, though Hebrew and other religiously oriented schools had been established as alternative schools under the Calgary public school board, a subsequently elected slate of school trustees terminated all such arrangements. This in turn caused some of the parents to turn to private schools to meet their wishes, whereas the Hebrew schools accepted temporary arrangements which permitted them to operate as alternative schools within the Calgary Catholic Separate School District.

Alberta Worth Commission (1972) held that "those opting for private schools should do so at substantial personal expense" (p. 61). The Commission further warned that "any wide-spread encouragement of private schools might lead to an unsustainable degree of educational and social fragmentation" (p. 61). In 1950 the Ontario Hope Commission recommended the continued exclusion of private schools from local tax monies and provincial grants (Stamp, 1985).

The Commissioning of Private School Studies

Alberta Studies

In response to the Government of Alberta's concern regarding a public school teacher's anti-Semitic teaching, the Premier directed the Minister of Education to undertake a special review of curriculum in order to ascertain whether any changes could be made "to foster greater tolerance and respect for minority groups in our society" (Ghitter, 1984, p. 7). On June 27, 1983, the Minister established the Committee on Tolerance and Understanding and appointed 12 members representing a wide representation of Alberta citizenship under the chairmanship of lawyer Ron Ghitter. A major mandate of the Committee was to "suggest to the Minister of Education ways of fostering in the school system, greater tolerance and respect for human rights, fundamental freedoms, and the dignity and worth of all individuals" (p. 8). The Committee examined aspects of public, native, intercultural, and private education. This paper makes reference only to the part of the Committee's study concerning private education.

Concurrently and partly in response to resolutions of the Alberta School Trustees' Association that a thorough examination of private schools in the province be undertaken, in July 1983 the Minister of Education called for bids on a proposal for a study of private schools in Alberta. The proposal itself had been prepared by the Planning Services Branch of the Department of Education and listed more than 50 issues and questions to be addressed and some 30 specified activities to be conducted. Private consulting firms as well as several university-based educator research teams tendered bids; the contract was awarded to Woods Gordon Management Consultants on the recommendation of a Steering Committee established by the Minister. The mandate of the study was "to examine the development and organization of private schools in Alberta and to consider future directions" (Planning Services Branch, 1983, p. 7). The study was to include an examination of financial issues and the impact of private

schools on public school systems and on the education of children. The 13 members of the Steering Committee were selected from teacher, trustee, educational administrator, and private schools organizations and from the public at large. One of its members, representing the Department of Education, served as Chairman.

The Ontario Study

The Davis announcement regarding the funding of Catholic secondary schools included reference to a commission of inquiry regarding private schools. By an Order in Council of July 26, 1984, Dr. Bernard Shapiro, then the Director of the Ontario Institute for Studies in Education, was appointed sole Commissioner. His mandate was to "document and comment on the contribution of private schools to elementary and secondary education in Ontario" and included the identification of possible alternative forms of governance of private schools, consideration of the desirability of public funding of private schools, and identifying possible relationships between private schools and publicly supported school boards (Shapiro, 1985, p. 78). The Order in Council naming Shapiro as the appointed commissioner also gave him the mandate to require the Minister of Education to appoint an advisory committee. The 15 members of the Advisory Committee included representation from boards of education, teacher associations, private school organizations, universities, and the Ministry of Education.

Contextual Differences

Three significant contextual differences for the two provinces are of relevance. Alberta had complete funding for Catholic separate schools for all elementary and secondary grades, whereas in Ontario such funding for Catholic separate secondary grades 11 to 13 was to be phased in beginning with September 1985. Public funding of private schools in Alberta had been in place since 1967, but none existed in Ontario. Finally, private schools in Alberta must be authorized by the Minister before they may open for instruction, whereas in Ontario the operators of private schools are required only to notify the Minister at the beginning of each school year of their intention to operate.

Study Procedures

The Ghitter Committee and the Shapiro Commission had been given general mandates which permitted each to examine what seemed necessary as the study proceeded. The Woods Gordon team, on the other hand, had been given an extended and precise list of items to examine.

The Ghitter Committee Study

The Ghitter Committee formulated a set of six principles to serve as a "supporting structure for . . . analysis and recommendations" (Ghitter, 1984, p. 16). These principles stated the Committee's value positions with respect to an open democratic society, the obligation of parents, maximum opportunities for children, the basic mission of education, the public school system, and shared experiences among diverse school populations. Many public hearings were scheduled and numerous briefs were received. Only part of this activity included visiting private schools and the examination of curricula used in them. A discussion paper on private schools was circulated in order to elicit further public response. The Committee reflected on what it had heard and what it had read in the briefs, and also on what it had observed in the schools it had visited, and then formed eight conclusions which consisted of *should* and *must*

statements. These, in turn, provided the rationale for the Committee's six recommendations. The status of the provincial public school system with respect to curriculum, facilities, and teacher qualifications also served as a major criterion for the formulation of its recommendations on private schools.

The credibility of the Ghitter Committee rested on the wide representation on the Committee and the expertise of the members in addressing any problems they would encounter. Its object was to identify any discriminatory biases and to recommend ways and means by which such might be reduced, eliminated, or controlled. Although the Committee was established in the wake of strongly biased discriminatory instruction by a teacher in a public school, its prior attention to private schools caused some consternation among some private school supporters. Though it may be assumed that the Committee took cognizance of available research studies and that it conducted its discussions in the context of educational history, pedagogy, and theory, such references appeared neither in its first discussion paper nor in its final report. The Committee's mode of operation appeared to be largely pragmatic, an assessment of what ought to be reasonable and acceptable at this time in Alberta education. Direct concern with the past or with the future is implicit rather than made explicit in its released reports.

The Woods Gordon Study

The Woods Gordon team prepared six background reports and contracted out the preparation of four additional reports. One report prepared by Woods Gordon staff researchers constitutes a basic data survey on enrollments during the 1978-1983 period. The team sent questionnaires to private schools, but less than one-quarter of these were returned. Since most of the data were available in more complete form in the records of the Department of Education and elsewhere, this effort appeared to be redundant. A second report provides a survey of private school facilities. The report contains no reference to the manner of sampling the schools. A third report provides a survey of the opinions held by stakeholders, Department of Education staff, and public and separate school system people. However, the report does not identify which organizations were represented by the "stakeholder" returns, nor does it define the use of the term. Questions solicited opinions on why parents chose to send children to private schools, on the right of parents to choose private schools, and on the question of whether private school supporters ought to have the right to direct their taxes to private schools. Due to the low return of questionnaires and the lack of documentation of the precise source of the received returns, this report has little value for subsequent reference. A fourth report contains a cross-country survey on grants to private schools, private school curricula, and the administration of private schools. Unfortunately, the report provides merely a tabulation of totals of responses, without indicating the status for any one province. A fifth report concerns the financial structure of private schools in Alberta. Finally, a sixth report prepared by the Woods Gordon staff contains a literature review consisting of selected brief notes on articles on the history of private schools, their funding, enrollments and quality of education, and on alternative schools. A two-page summary of the literature review comprises about 20 brief statements, most of which begin with the phrase "some sources argue that." Some significant recent publications had not been identified by the reviewers. A critique on the contents of the review is not provided. Furthermore, such a compilation had already been completed by university researchers and would have been available to the Woods Gordon team.

Of greater substantive and critical value are the reports prepared by outside experts to whom the Woods Gordon team had contracted their preparation. A law firm (Parlee, Irving & Associates, 1984) surveyed 44 private schools with respect to their legal status. It provided a review of statutes concerning private schools in the provinces, including legal opinions on the implications of section 93 of the Constitution Act of 1867, the Alberta Individual's Rights Protection Act and the Canadian Charter of Rights and Freedoms. A well documented report was prepared by an educator-researcher (Harvey, 1984), who had made many on-site visitations in addition to a careful examination of the content of the curricula, the methods of teaching, and the instructional environment. This report continues to be a useful reference and can be used as a base study against which future developments might be measured. Another educational researcher (Pain, 1984) carried out the testing of students in private schools, as well as those of a comparison public school group, at the grades three, six, and nine levels. The researcher also documented the attitudes of students. Though the report is useful in that it documents a carefully carried out testing program, the researcher warns that the sampling was too small and that results must be interpreted with caution. Meaningful overall differences were not found between private and public school students. A former director of a regional office of education (Andruski, 1984) surveyed the opinions of all five current directors of regional offices with respect to the adequacy of the current system of approving and monitoring private schools, the evaluation of teachers and of instruction, and of the curricula and facilities. Since well documented responses were obtained from the total population of directors of regional offices, this report also can serve as a base against which developments can be assessed.

The Woods Gordon team met with the appointed Steering Committee on a regular basis, checking its findings and recommendations with the Committee and hearing counsel from members of the Committee in the course of the preparation of its final report.

In its main report the Woods Gordon team provides a brief statement on the context of education in Alberta, followed by seven *policy considerations*. These lead to 10 key questions, six of which are *should* (what ought to be) questions, and four of which are *what is* (state of affairs) questions. For each of the 10 questions the report provides a brief summary of the data or information given in the corresponding ancillary report, including opinions gathered during the collection of the data. This is succeeded by one or more conclusions, most of which take the form of *belief* ("we believe that") or *indicator* ("opinions indicate that") statements. These conclusions, in turn, provide the rationale for one or more recommendations in response to the posed question.

The Shapiro Commission Study

In preparation for the writing of the Commission report, Shapiro visited 40 private schools, received 514 written briefs, held more than 20 meetings with interest groups, and informal consultation with more than 100 persons and groups, and met with his Advisory Committee six times. Each of the background papers was prepared by academic researchers. One paper (Stamp, 1985) gives an overview of the development of private schools in Ontario and an analysis of the nature of these schools in the context of changing conditions in public education. A second paper (Finkelstein, 1985) provides a detailed analysis of the legal and constitutional context within which private schools operate. A third paper (Holmes, 1985) provides an outline of various philosophical and value positions and their implications for funding, an analysis of

alternative funding policies, and a recommendation for the implementation of a preferred option. A fourth paper (Lawton, 1985) provides an analysis of alternative methods of financing private schools and estimates of the cost to government of implementing each of the options. In addition, the report has appended examples of alternative school practices within three city public school systems.

The appended background research papers form an invaluable part of the total report and serve as the resource for the rationale Shapiro provides for each of his recommendations which take the form of policies for action.

Findings and Recommendations

The Ghitter Committee Report

For Alberta private schools, the Ghitter Committee recommended that the current level of funding at 75% of the per pupil grant to public schools be maintained, but that an additional 5% of funding be made available for the promotion of liaison and shared experiences between public and private schools. Current legislation provides for such shared arrangements (Sloan, 1980). The Committee recommended that additional funding be made available for private schools which provide special education programs for handicapped students. Also, it recommended that Alberta Education develop review procedures to ensure that all curriculum materials used by private schools meet the same basic standards required of public schools and in particular the "basic criteria of tolerance, understanding and respect for all people" (p. 114). The only major change from current practice was the Committee's recommendation that all private schools be required to employ only certificated teachers and that there be only one recognized category of private schools.

The Woods Gordon Report

The Woods Gordon study concluded that private schools have a statutory right to exist in Alberta in accordance with the Canadian Charter of Rights and Freedoms and Alberta Bill of Rights, but that Alberta Education "has the legal power to exercise control" over the content of curricula, teacher qualifications, and student performance (p. 21). The report states that although Alberta Education is not legally required to provide any funding to private schools, the current level of support should be maintained and that consideration should be given to capital support for selected equipment and eligibility for the same types of funding grants as public schools, including some transportation costs. It concurs with the Ghitter Committee recommendations, that a class of private schools not requiring certificated teachers be eliminated, and that improvements of the curricula in some of the private schools were necessary. Further, the report holds that "home schooling sites" be allowed to continue under special circumstances only, such as geographic isolation, the disabilities of students, or even the accommodation of the religious or other convictions of parents.

The Shapiro Commission Report

One external survey provided the Commission with the status of private schools across Canada and in other countries. Three 1984 independent public opinion polls in Ontario showed a range of 30% to about 45% of respondents indicating a measure of support for the public funding of private schools (Shapiro, 1985, p. 19). This degree of support was relatively low compared with Alberta, where public opinion polls during the same year indicated that about two-thirds of all respondents favored some public funding of private schools (Bergen, 1986). By no means did Shapiro find consensus among private schools and their respective associations. Those who advocated public

funding did so on the basis of a prior right of choice and of fairness in view of the fact that all pay taxes in support of schooling. Some advocated public funding, but with reservation, in case such funding would entail some loss of autonomy. Others opposed public funding, valuing independence more highly than any form of public support or stressing the importance of the separation of church and state in education.

The Commission set the stage for its recommendations by stating its position that,

> On moral grounds, limiting public support to Roman Catholic schools seems indefensible, for the constitutional provisions that are usually advanced to justify the special status of such schools serve only to describe its history. They do nothing to inform us about what we *ought* to do. (p. 48)

and that,

> On legal/constitutional as well as on moral grounds, the Commission believes that the special status of the Roman Catholic schools is discriminatory. (p. 49)

The Commission's understanding of the Constitution Act of 1867 was that section 93 "specified only which schools must be funded and not which others could not be funded" (Shapiro, 1985, p. 49). Together with the antidiscrimination provisions of the Canadian Charter of Rights and Freedoms an argument could be provided for public funding of private schools. The extension of public funding to the secondary Roman Catholic Schools increased the strength of the argument in the opinion of the Commission. Furthermore, the Commission held that citizens ought to have the right to make alternative choices and therefore not be bound by a legal public monopoly in education.

A major recommendation of the Shapiro Commission states that where possible a private or independent school should operate as an "associated school" in agreement with a local school board. Such a school should receive a grant equal to the average per pupil operating costs of a school under a local school board multiplied by the enrollment in the associated school (1985, p. 54). Such an arrangement might include the sharing of programs and the provision of administrative services by the school board. Current Alberta legislation allows a limited form of the "association" Shapiro recommends (Sloan, 1980). The Commission report stresses that associated school arrangements be optional. The report emphasizes that in any private school satisfactory instruction must be provided for each student, and that all teachers be qualified, either by Ontario certification or deemed to be qualified by the Minister of Education. The report further recommends that private schools participate in some measure in capital and transportation grants, and receive funds for the purchase of learning materials. Also home schooling ought to be permitted on informing the director of education of the local school board. However, diversity within the public school system should also be encouraged, and alternative schools within school boards should be recognized as legitimate educational enterprises.

Discussion

One of the major concerns of the Ghitter Committee addressed the curricular content of private and public schools. Subsequently the Department of Education completed an audit of selected private school programs (Alberta Education, 1985). According to the audit report, some private schools had not adequately covered the Alberta Program of Studies. The principles for a new school act formulated by the Policy Advisory Committee for the School Act Review (Fyfe, 1985) supported the freedom of parents to choose private schooling for their children. Bill 59, which received first reading in the Legislative Assembly on June 17, 1987, would change little with respect to the current status of private schools in Alberta, but adds provisions for home

education programs under the supervision of school boards. The Woods Gordon report supported home study provisions. The Bill also makes provision for charging school principals with the duty of ensuring that the instruction provided by teachers is consistent with the prescribed or approved courses of study. This specification reflects the concern expressed in the Ghitter Committee report regarding curricular content. Following public discussion of the Bill and subsequent debate in the Assembly, a new School Act is to be proclaimed and in force for September 1, 1988.

On June 25, 1987, the Supreme Court of Canada ruled that Ontario's financing of Roman Catholic separate high schools is constitutional and that the Charter of Rights and Freedoms does not apply to the rights outlined in section 93 of the Constitution Act (1867). Following this decision, the Government of Ontario can expect powerful lobbying on the part of private school supporters who would welcome the implementation of some of the recommendations of the Shapiro report, particularly with respect to government assistance in the financing of private education.

Whereas the Alberta reports largely reflected the status quo and offered recommendations for modest adjustments and changes, the Shapiro Commission broke entirely new ground in that the philosophical and value foundations for new policy decisions had to be addressed. Whereas in Alberta separate school funding had included all grades since the establishment of the province, in Ontario the funding of the senior high grades of Catholic separate schools was not introduced until 1985. In fact, in 1985 a private school sector of Catholic education was drawn into the public support realm. Included in the same announcement by Davis (Shapiro, 1985) was the matter of extending the funding of Catholic schools and of inquiring whether public funding of independent schools would be desirable. It may be assumed that the inquiry on private schools would not have been commissioned at this time had a decision not been made to fund secondary Catholic schools as an integrated part of the separate school system. It also follows that the recommendations formulated by the Commission on Private Schools would relate to the changed situation in the funding of Catholic schools in Ontario.

The reports for each of the two provinces addressed issues and concerns related to the constitutionality and legality of funding private schools, the freedom of choice in the context of the Canadian Charter of Rights and Freedoms, the concern that students should be provided with quality education, the relationships between private and public schools, the impact of private school funding on provincial educational costs, and the impact of the growth of private schools on public schools. The studies recognized that major decisions had to be relevant in the context of today's pluralistic and multicultural society.

An important difference between the Ghitter Committee and Woods Gordon reports and the Shapiro report is that in the Alberta reports the private schools were perceived as an acceptable but tangential adjunct to public schools, whereas Shapiro held private schools to be an integral part of the provincial education system—"like their public school counterparts . . . schools of Ontario" (Stamp, 1985, p. 205). Hence many of Shapiro's recommendations are addressed to all the schools of Ontario, not just to the private schools.

Usefulness of Reports for Research

According to Holdaway (1986, p. 260), "Basic research can have a long-term effect on policy (and practice), but immediate, direct linkage should not be expected." The presentation of basic research was not the expectation held for any one of these government sponsored studies. Their usefulness for further research is therefore limited.

Since the Ghitter Committee provided no ancillary reports, we are left with a record of its opinions and beliefs, and its subsequent conclusions and recommendations. Little factual data has been recorded in its final report.

The Woods Gordon team gathered considerable data, much of which, however, is not sufficiently comprehensive and lacks precise documentation. Much of the data gathered by Woods Gordon was already available, and some of it in better form than that which was collected. Duplication of effort and cost might have been avoided had the team included the essential expertise to identify the information which was already at hand. One may ask why the Planning Services Branch required the contractor to gather basic data which were readily obtainable, in part within the Department of Education itself. The ancillary reports on the legal context for private schools in Alberta, on the curriculum, teaching methods, and instructional environment of private schools, and on the status quo of Alberta's monitoring and control of private schools are useful. These three ancillary reports were prepared through sublet contracts.

Two ancillary studies of particular note are included in the Shapiro Report. One concerns the philosophy, values, and implications for funding private schools (Holmes, 1985), and the other alternative methods of financing private schools (Lawton, 1985). Both of these would be helpful to researchers on private schools in other provinces.

Relevance of Studies for Policy Making

Governments can make policy without consulting researchers. And the governments of Alberta and Ontario can make policy governing private schools without directing committees and commissions to produce recommendations. Wirt and Mitchell (1982) pointed out that "the utilization of research or evaluation findings in policy formation is clearly optional" (p. 2). Research knowledge is "only one source for decision making," and "public policy was being formulated long before there were any social sciences" (p. 2).

In an examination of the question whether research matters to policy makers, Holdaway (1986, p. 258) concluded that "policy usually results from social, economic, and political forces and from personal sentiment rather than from research findings." Apparently in none of the five provinces which have introduced funding of private schools did research precede government policy. In Alberta (Digout, 1969), for example, the lobbying of private school interest groups persuaded the Government to introduce such funding. As outlined by Wirt and Mitchell (1982), governments are moved to act when the interests or demands of constituencies become "concrete and identifiable," are "transformed into issues," and when "specific proposals for action are formulated" (p. 6). For example, the unrelenting demand of Roman Catholic separate school supporters in due time caused former Premier Davis to announce a government policy in support of the extension of funding to include all high school grades. However, realizing that the decision would arouse the concern of non-Catholic private school supporters, Davis simultaneously announced the appointment of a commission to study the question of public funding of private schools. It appears that the "personal sentiment" of Davis had also changed during his term of office. His action might be compared to that of Trudeau who in the 1970s announced the Government's policy on bilingualism and biculturalism. Anticipating the concerns of Canada's many ethnic groups, he simultaneously announced a policy in support of multiculturalism (Spicer, 1986). However, one may speculate whether Davis would have made his controversial announcement had he decided to lead his party in another election.

Coleman and LaRocque (1983, p. 247) emphasized that policy-relevant research should be designed "to provide data and interpretations which have predictive utility concerning consequences of policy options." In the words of Phillips and Phillips (1984) politicians are concerned "how the costs and benefits of their actions will be distributed among the citizenry" (p. 379), and that researchers should provide decision-makers "with an explicit framework which describes how the policy should be implemented to achieve maximum net benefits" (p. 380). Of the three studies discussed in this paper, the Shapiro study best meets this criterion. However, the Ghitter and Woods Gordon studies related to major government support programs already in place, whereas the Shapiro study concerned recommendations for the initiation of such programs. Though the Ghitter and Woods Gordon reports recommend some additional support for private schools, it is most unlikely that during a time of reduction in grants to education any such additional support would be instituted. Phillips and Phillips said that policy research cannot be done in a vacuum, but must be done with an awareness of the political context. All three studies satisfied this criterion.

One might say that the Government's decision to establish the Ghitter Committee was prompted by both social and political factors as a consequence of the Keegstra affair. The Woods Gordon study likely was prompted by the same factors, but for a different reason. A Government policy of funding private schools was in place; however, questions were being raised about the adequacy of private schools, and in particular those not being required to hire certificated teachers. Though a previously announced intention of slightly increasing funds to private schools was placed on hold, the study provided the Government with support for its current policy, as well as for any contemplated changes.

Wirt and Mitchell (1982) held that because "political actors must be concerned with securing and maintaining power" (p. 3), their use of research knowledge findings depends on its enhancement of their political influence. For example, though the Alberta Government due to budget restraints found itself compelled to reduce grants to education in 1987, it passed compulsory car seat-belt legislation with reluctance as an encumbrance on individual freedom, and only after much persuasion of the medical professionals who claimed that such a universal seat-belt observance would result in substantial reduction in provincial health care costs. In view of provincial cost-cutting policies, the largely provincially funded internship program for newly certificated teachers was terminated for 1987-1988 even though the results of an evaluation strongly supported its continuation (Gee, 1987). Such policy decisions, in the context of the concurrent provincial economy, support a prediction that recommendations contained in the Ghitter and Woods Gordon reports which would entail additional public funding of private schools would not likely be implemented at this time.

Shapiro (1985) cautioned in the introductory part of the Commission Report, that

> the "facts" yielded by research studies can not in themselves respond to the public policy question of whether to provide more public funds to private schools. The response to such a question is not so much a matter of facts as it is a matter of values. (p. 38)

Shapiro raised the issue of values when he questioned whether it were discriminatory to fund Roman Catholic schools without providing similar consideration to schools of other religious and also secular groups. This, then, appears to be the strongest criterion in the Shapiro report in support of his recommendations. The Ontario Government's response to his recommendations may be motivated more by social and political than by economic forces. The issue of whether Ontario's Bill 30, providing for the financing of Roman Catholic education to the end of high school, is discriminatory and contravenes the Charter of Rights and Freedoms, was placed before the Supreme

Court of Canada in January 1987. More than a dozen groups, including the Government of Alberta, were interested participants, each presenting a factum to the Court. Much political interest was evident, as the Court's decision affects not only Catholic and perhaps also private schools in Ontario, but was perceived to have potential impact on educational systems in other provinces. The Court has settled the Roman Catholic separate school issue. It might be called on to adjudicate on private school financing, should the Ontario Government introduce such on the basis of the Charter.

Conclusion

A government may decide to appoint a commission or a commissioner to do a study by means of an order in council. If the appointed person is adept in educational research and has an understanding of historical and philosophical factors and has a sensitivity to the prevailing political environment, and also is given the autonomy to develop the nature of the study, the report may be of more permanent value and impact and be of greater worth to other researchers. Such was the case for the Ontario Shapiro study and report. A government or its minister may also appoint a committee comprising a selected chairman and members representing various sectors of the public. The findings and recommendations of such a committee are more likely to reflect the current concerns of the public, and, however useful and appropriate such recommendations may be, these need not be rooted in intensive research or in theoretical formulations. Such was the case of the Alberta study of the Committee on Tolerance and Understanding under the chairmanship of Ron Ghitter. A government may also choose to sublet a contract, and even though it calls for bids, it may have reasons for selecting a bid from a management firm rather than one presented by educational researchers. If a general management firm is selected, it is less likely that theoretical and research underpinnings will be major concerns in the prepared report, but rather that the current practicality of its recommendations will characterize the report. Such was the case of the study of the Woods Gordon Management Consultants.

The current economic prospects in Ontario are brighter than those of Alberta. Hence the factor of costs may not weigh as heavily in the consideration of implementing any of the Shapiro recommendations. The Peterson Government might find it useful to gain a new mandate at the polls before it is faced with dealing with the controversial issue of private school funding.

The policy making value of any study depends on whether its recommendations can be implemented while at the same time enhancing the political strength and social status of the Government. Nevertheless, an unanticipated major change in the economic and political environment can cause otherwise reasonable recommendations to be set aside while other pressing issues receive priority attention. The policy making usefulness of a study is contingent on the degree to which its recommendations reflect the reality of economic, social, and political forces which sway the decisions of governments. Government policies are likely to reflect the dominant public values and current political milieu in greater measure than any facts established by research alone.

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